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Geo. S. Demuth and E. R. Root, Editors — H. H. Root, Assistant Editor — H. G. Rowe, M'n'g Editor

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PRICE LIST OF BINGHAM KNIVES

	Each.	Wgt.
Steam Heated, one stem, 4 ft. tubing	$4.00	40 oz.
Steam Heated, two stems, 8 ft. tubing	5.00	40 oz.
Bingham Knife, 8½-inch	1.35	20 oz.
Bingham Knife, 10-inch	1.50	24 oz.
Steam Generator, copper	2.50	40 oz.
Steam Generator, galvanized iron	2.00	40 oz.
Generator Support	.75	20 oz.
Torch for gasoline or kerosene	9.00	7 lbs.
Torch, gasoline, smaller size	5.00	
Extra tubing for knives, per foot	.20	

Our steam knives are tinned on the inside to keep them from rusting.

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	Size of stove.	Each.	Wgt.
Big Smoke tin with shield	4 x10	$2.25	2¾ lbs.
Big Smoke tin, no shield	4 x10	1.75	2 lbs.
Smoke Engine, tin	4 x7	1.50	2 lbs.
Doctor, tin	3½x7	1.25	1¾ lbs.
Conqueror, tin	3 x7	1.00	1⅝ lbs.
Little Wonder, tin	3 x5½	.90	2 lbs.

Smoke Engine Doctor, or Big Smoke with shield in copper, $1.00 extra.

Special Beehive Sale

These hives are made of the best Northwestern Soft Pine and the workmanship is equal to any on the market. With this mill-run stock, the inspectors have let a few small sound knots pass, but much of it will be found perfectly clear stock. This is the greatest beehive value that has been offered in years. Order early while you can get this stock and avoid transportation delays.

Pack of five, one-story 8-frame hives, wood covers ..... $ 9.50
Pack of five, one-story 10-frame hives, wood covers 10.35
Pack of five, one-story 8-frame hives, metal-roof covers and inner covers 11.80
Pack of five, one-story 10-frame hives, metal-roof covers and inner covers 12.75

With slotted bottom-bar frames, 10c per hive extra.

A. G. Woodman Co., Grand Rapids, Mich.

HONEY MARKETS

U. S. GOVERNMENT REPORT

Information from Producing Areas (first half of April).

CALIFORNIA POINTS: Southern California—Much-belated showers fell during late March and early April, and will be of help to late vegetation and fruit trees. As orange trees are in full bloom, the weather may curtail the crop of orange honey. Buckwheat and sage are now expected to yield sufficient to carry the bees through the winter. Many colonies stored considerable honey from mustard. In the Imperial Valley cold, windy weather is keeping bees from willow and mesquite bloom, and retarding brood-rearing somewhat. Ton-lot sales reported, light amber, 10½-12c per lb. Central California: Little inquiry reported for the small amount of honey available. Ton-lot sale of light amber extracted reported at 11¼c per lb. Northern California—Rains have continued. Prospects are good for thistle crop, fair for alfalfa. Bees are working on oranges and olives, and are reported much healthier than for several years. The first extraction of the year has already come to market. Few cases dark honey, bitter almond flavor, reported sold at 7c per lb. Beeswax has moved at 28c per lb. cash, 30c in trade.

PACIFIC NORTHWEST—A large amount of alfalfa was killed by freezing during the winter, and reports are received of alfalfa ground being plowed up to be put into wheat. This will of course affect the honey crop. Brood-rearing is in full swing. Bees are working on fruit bloom, willows, and dandelion. One car white extracted reported sold at 9c per lb.; beeswax, 28c per lb.

INTERMOUNTAIN REGION—During the past two weeks rainfall has been spotted, but generally heavy, improving crop prospects. Although winter losses may be less than had been expected, they will still be rather heavy. There has been much windy weather lately. Some feeding will be necessary. Pollen has been coming in from willow, poplars, and box elder. Plums, pears, and cherries are blooming. Bees are building up nicely. Many hundred pounds of package bees reported shipped in from the South to replace winter losses and to increase holdings. Only occasional cars now remain unsold. During this period one car white sweet clover and alfalfa extracted sold for 8½c, one for 9¼c, one car mixed white and light amber at 8¾c, and a car of light amber at 8c per lb. Other sales, white, 60s, 11-12½c; small pails, 11½-14c; light amber, ton lots, 9-9½c; small pails, 15c per lb. Beeswax has sold at 28-34c per lb.

ARIZONA—Mesquite is putting out tags, but prospects are uncertain, due to lack of rainfall. In a few sections bees are storing a little surplus, but in general spring flowers are not furnishing enough nectar and beekeepers are feeding. Few sales extracted, 60s, 10½c, small pails, 11-13c per lb.

NEW MEXICO—Still dry, windy, and with cool nights. Apples and pears are in full bloom, and mesquite is expected to bloom soon, but few colonies are strong enough to take advantage of the flow.

TEXAS—Conditions very spotted over the state. Where drouth still continues, the outlook is very uncertain. Even where rain has fallen, reports vary greatly; some report an average of 20 lbs. new honey from mesquite, catsclaw, and huajillo; others in same territory state that colonies are full of brood but short of bees. Very few sales reported, dark to light amber extracted at 11c per lb. basis. Beeswax has sold mostly at 30c per lb. cash; some higher.

PLAINS AREA—Spring is early and warm, but dry, and clover is growing slowly, except where recent showers have fallen. Bees are working on dandelion, elm, maple, and willow, and are building up nicely. There will be a very small carry-over of honey. Few sales extracted white clover reported at 10½-11c per lb. in ton lots; 15c in 60s; 18c per lb. in small pails.

EAST CENTRAL AND NORTH CENTRAL STATES—Bees wintered exceptionally well. In most areas clover and other honey plants are reported in good condition, but some report doubtful prospects on account of drouth. Bees are working on dandelion and willow, and are raising brood. Few sales reported of white clover extracted in large lots at 10-13c per lb.; dark honey, 9c per lb.; No. 1 white comb, $4.50-5.00; few, $5.75. Beeswax price has ranged 27-38c per lb.

SOUTHEASTERN STATES—Bees are working on white clover in Louisiana, but storing little nectar. Cool weather, with little rain, has also curtailed flow from willow. Considerable tendency noted to rob. Latest reports regarding spring prospects are less optimistic than were those of two weeks ago. Conditions in south Georgia are spotted; some apiaries are gathering considerable nectar, while a few miles away bees are unable to make a living. The early spring crop which has been extracted is reported to be a little below normal in quality. Queen yards are in fine condition and package bees are in good demand. Cool, dry weather is retarding bloom. Colonies and plants in Alabama are in fine shape, and bees are beginning to work on white clover, which is 10 days early. Bees are breeding well and packages will soon be ready to ship. Rain has been seasonable. Bees in Florida are slow in building up to full strength, due to cold nights and chilly winds. Later prospects are good. A little pennyroyal honey was extracted in March.

PORTO RICO.—Conditions show little change. Bees storing a little nectar in the hills.

NORTHEASTERN STATES—Winter losses reported unusually light. Bees are active, carrying in large quantities of pollen and some nectar. Colonies are raising lots of brood and are building up rapidly. A few drones reported flying. A few report scarcity of stores and probable spring loss. The outlook is for an excellent clover crop. Few sales reported, extracted white clover, ton lots, 11-12c; 60s, 13c; small pails, 14-17c. Buckwheat, large lots, 8-10c; small pails, 12-14c; white comb, $4.50-5.50 per case. Buckwheat comb, $4.00-4.50 per case. Beeswax price shows great variation.

Telegraphic Reports from Important Markets (Market reports are for April 14-15.)

BOSTON—No large arrivals during past two weeks. Comb: Supplies light. Good demand and stock is cleaning up. Sales by receivers to retailers, Vermont, 20-section cases white-clover carton stock, 14 oz., $6.00; 12 oz., $5.00; 10 oz., $4.25; New York, 24-section cases white clover, carton stock 14 oz., $5.00-6.00. Extracted: Demand slow, market slightly weaker and dull. Sales by receivers to manufacturers, wholesalers, and bottlers, per lb. New York white clover, mostly 14c. Intermountain, white sweet clover and alfalfa, 15-17c; Porto Rico amber to arrive, 10½-11c.

CHICAGO—No large arrivals reported since last report. Supplies liberal. Demand and

(Continued on page 340.)

Report of Honey Producers

Early in April we sent the following questions to actual honey producers:

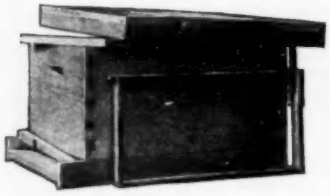
1. Do you expect that any of last season's honey will be carried over until new honey is ready for market? If so, about what per cent of the 1924 crop will thus be carried over in your locality?
2. At what prices have sales been made (if any) in your locality during the past thirty days in carload lots? (a) For extracted honey per pound?

3. What are prices when sold to retailers in case lots in your locality? (a) Extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per case?
4. What is the retail price to consumers in your locality? (a) Extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No 1, per section?
5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid.
6. What is the per cent of winter and spring loss of colonies, if any, to date in your locality?
7. What is the condition of the colonies at this time as compared with normal? Give answer in per cent.
8. What is the condition of the honey plants at this time as compared with normal? Give answer in per cent.
9. How does the early honey flow (if any) thus far compare with normal? Give answer in per cent.

The following are the answers received:

State.	Reported by:	Pct. Unsold.	Carlots. Ex.	In small lots. Ex.	Retail prices. Comb.	Ex.	Comb.	Movement.	Winter-Spring Loss Pct.	Col. Con. Pct.	Plant Con. Pct.	Hon. Flow Pct.
Ala.	W. D. Achord	0						Fair	0	100	100	100
Ala.	J. M. Cutts	10				$.80		Fair	½	100	100	100
Ala.	J. C. Dickman			$.80		1.00		Fair	5	100	80	90
Ark.	J. Johnson	0								100	110	100
Ark.	J. V. Ormond	0							0	100	100	100
Cal.	M. C. Richter	0					$0.30	Fair	10	90	110	80
Cal.	Geo. Larinan					1.00		Fair		80	50	
Cal.	M. H. Mendleson	0		1.00	$6.85	1.20	.38	Slow		25		0
Cal.	L. L. Andrews			1.00				Fair	20	100	40	50
Cal.	M. A. Saylor			.80	4.80	1.00	.30	Rapid	10	100	100	100
Col.	B. W. Hopper	0				.85	.25	Fair	5	100	100	100
Col.	J. A. Green	0	.08½	.75	3.50	.95	.17	Slow	8	100	75	100
Conn.	A. Latham	0		1.00	6.50	1.25	.35	Fair	2½	110	95	100
Conn.	A. W. Yates	0		1.00	7.50	1.30	.40	Slow	2	100	100	100
Fla.	C. C. Cook	0		.80		1.00		Fair	5	100	100	90
Fla.	H. Hewitt	0		.80		1.00		Rapid	0	100	100	75
Ga.	J. J. Wilder	0						Fair	15	100	100	50
Ida.	J. E. Miller	0		.75			.30		4	90	100	
Ill.	A. C. Baxter	0		.80		1.25		Fair	2	80	80	
Ill.	C. F. Bender	0			6.00		.30	Slow	15	100	110	
Ind.	Jay Smith	0				1.25	.35	Fair	15	100	125	125
Ind.	T. C. Johnson	0		.90	4.80	1.15	.28	Slow	5	100	100	
Ind.	E. S. Miller			1.00	5.75	1.25	.30	Slow	10	100	100	
Ia.	W. S. Pangburn					.95	.23	Slow	1	100	90	
Ia.	E. G. Brown	0		.75	4.50	1.00	.30	Rapid	5	125	90	
Ia.	F. Coverdale	0			4.50		.25	Slow	2	125	95	120
Kans.	J. A. Nininger			.75	5.00	.95	.25	Fair	9	80	100	
Me.	O. B. Griffin				6.50	1.50	.35	Slow	5	80	80	
Md.	S. G. Crocker	5		1.00	5.75	1.50	.33	Slow	10	100	100	
Mass.	B. N. Gates	10						Fair		95		
Mich.	F. Markham	0		.80		1.25		Fair	2	125	100	
Mich.	I. D. Bartlett			.75		1.00		Fair	15	100	100	
Mich.	B. F. Kindig	0						Slow	4	100	120	
Minn.	F. Jager	0		.80	6.00	1.00	.35	Fair	5	150	150	100
Mo.	J. H. Fisbeck	0							0	100	100	100
Mo.	J. M. Romberger	0		.80	6.00	1.10	.30	Fair	2	70	100	75
Mont.	R. A. Bray	0	.11	.65	4.75	.80	.25	Fair	10	100	100	
Neb.	J. H. Wagner		.10	.65		.90		Slow	10		100	110
Nev.	T. V. Damon	0		.75	4.25	1.00	.33	Slow		80	100	100
Nev.	E. G. Norton	0	.08¾					Fair	3	100	100	
N.J.	E. G. Carr					1.25	.35	Slow	10	80	100	
N.Y.	G. B. Howe	0				1.00	.30	Fair	5	80	100	
N.Y.	O. J. Spahn	30						Slow	0	100	100	100
N.Y.	Adams & Myers	0		.85		1.25	.30	Fair	2	100	100	
N.Y.	F. W. Lesser	0						Slow	5	95	100	
N.Y.	R. B. Willson	0	.11¾			1.25	.33	Fair	5	100	100	100
N.C.	C. L. Sams	5		.90	5.00	1.00	.25	Slow		100	100	100
N.C.	W. J. Martin	0		1.00	4.50	1.25	.30	Fair	5	100	100	100
N.C.	C. S. Baumgarner			.75		1.25	.35	Slow	0	100	100	100
Ohio.	R. D. Hiatt	0		1.00	6.00	1.35	.35	Fair	5	100	95	
Ohio.	J. F. Moore	0		.80	4.50	1.10	.25	Fair	5	90	90	
Ohio.	Fred Leininger		.11					Fair	2	90	90	
Okla.	Jos. Heueisen	0						Slow	6	100	100	100
Okla.	C. F. Stiles	0		.90	6.00	1.15	.35	Slow	2	90	90	
Ore.	H. A. Scullen							Slow	5	100	100	100
Pa.	D. C. Gilham	3		1.05	7.20	1.40	.40	Fair	25	85	95	100
Pa.	H. Beaver			.70		.80		Slow	8	90	80	
S.C.	E. S. Prevost	0				1.00	.40	Fair	10	100	100	100
Tenn.	J. M. Buchanan	0				1.25	.35	Slow		90	90	
Texas.	H. B. Parks	0							5	100	65	100
Texas.	T. A. Bowden	0		.80		1.05		Slow	2	110	60	50
Texas.	J. N. Mayes	0		.55		.75		Rapid	1	95	100	95
Utah.	M. A. Gill							Fair	10	100	85	100
Vt.	J. E. Crane	0		1.00	6.00	1.25	.35	Fair	5	80	80	
Va.	T. C. Asher	0						Fair	5	80	85	
Wash.	W. L. Cox	0						Rapid	3	100	95	
Wash.	G. W. B. Saxton	0	.10½	.60		70		Fair	3	100	75	100
Wis.	N. E. France	0		.80	4.50	1.00	.25	Slow	2	100	80	
Wis.	E. Hassinger	0		.80		1.00		Fair	3	100	100	
Wis.	H. P. Wilson	1½	.11¼		5.50	1.15	.33	Slow	5	100	100	
Wyo.	C. H. Ranney	0		.65		.75		Slow	8	95	100	

WEIGH THIS CAREFULLY



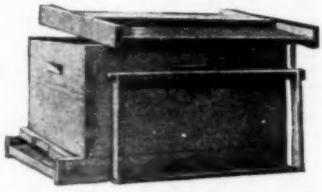
Metal Cover Hives

With Inner Covers

Quality in every inch has been our motto in building these hives. The cover is made of heavy white pine covered with heavy gauge galvanized iron—will last a life time. The body, and in fact all the lumber used in our hives, supers and frames is clear white soft pine. All parts are full thickness, lumber perfectly smooth and exact in fitting. See our guarantee. Hives include metal cover, inner cover, body, frames, bottom board, tin rabbet and nails. Write for catalog.

10 fr. size in lots of 5 - - - - - - - - - - $2.89 each
8 fr. size in lots of 5 - - - - - - - - - - 2.58 each

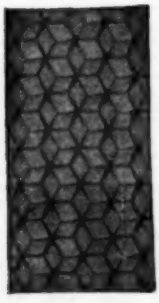
Excelsior Wood Cover Hives



These hives are exactly the same as the above, except the covers which are made of wood and do not use an inner cover. Direct sales without dealer's margin is the reason for these saving prices to you. Write for our 1925 catalog—Free.

10 fr. size in lots of 5 - - - - - - - - - - $2.39 each
8 fr. size in lots of 5 - - - - - - - - - - 2.19 each

Comb Foundation

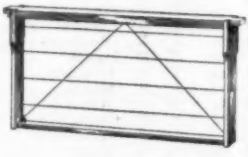


Medium Brood, 5-lb. Boxes - 70c per lb.

Our Thrifty comb foundation will save you money on purchase price and honey crop. Fresh foundation! That is the reason bees work on any brand of foundation first—Our production per day is 1,200 lbs. We make it fresh—you and your bees will like it. For 100% non-sagging combs, wire like the picture of the frame.

	Sheets to lb.	1 to 4 lbs.	5 to 24 lbs.	25 to 50 lbs.
Heavy Brood	6½	$0.72	$0.65	$0.60
Medium Brood	7½–8	.75	.70	.65
Light Brood	9–10	.77	.72	.68
Thin Surplus	28–30	.85	.75	.70
Ex. Thin Surplus	30–32	.87	.78	.73

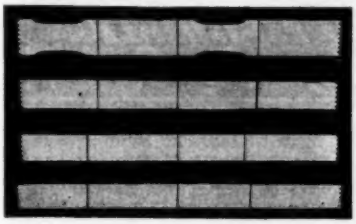
FRAMES



Hoffman Heavy Corner Cut	$5.45 per 100
Shallow Ext. Frames 5⅜ inches	4.35 per 100
Shallow Ext. Frames 4½ inches	4.35 per 100
Shallow Ext. Frames Heavy Top	5.00 per 100
Metal Spaced Frames	7.25 per 100

See Next Page **The Fred W. Muth Co.** →

Sections

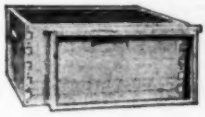


Clear Basswood—sharp knives—careful selection of grades and perfect packing make our quality stand out as one of the best. See our guarantee.

Size	100 Lot		500 Lot		1,000 Lot	
	No. 1	No. 2	No. 1	No. 2	No. 1	No. 2
4¼x1⅞ Sec	$1.30	$1.20	$5.85	$5.55	$11.35	$10.60
Plain Sizes	1.15	1.00	5.35	4.70	10.40	9.40

Hive Bodies

These are the same as one-story hive but without covers or bottom boards. Quality with saving is what you buy when you deal with Muth. Get our complete catalog—Free.



5–10-Frame Bodies with Frames.....$6.20 per crate
5– 8-Frame Bodies with Frames..... 5.65 per crate

Section Holders

	100 Lots
Scalloped Section Holder	$3.75
Plain for 4¼ x 1½	3.40
Plain for 4 x 5 x 1⅜	4.40
Fences, either size	5.80
Wood Separators	1.35

Comb Honey Supers

Complete but without Sections or Foundation
(4¼ x 1⅞ size)

5–10-Frame No. 1 Supers.....$4.00
5– 8-Frame No. 1 Supers..... 3.85

See our catalog for other sizes.

Muth's Ideal Bee Veil

160,000 sold is proof that this veil is what beekeepers want. There are others that look like this veil but there is only one Muth Ideal Bee Veil. **90c each.**

Our Unconditional Guarantee

Our supplies are manufactured under the greatest labor saving system. We sell direct to beekeepers and associations—you save the difference. If our supplies are not equal to the best that you can buy, ship them back and we will pay the freight both ways. You are the judge.

Fred W. Muth
President

The Fred W. Muth Co.

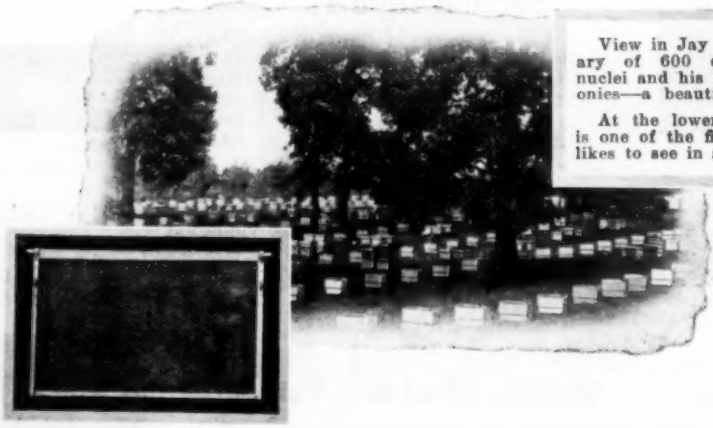
"The Home of Personal Service"

Pearl and Walnut Sts. **Cincinnati, Ohio**

"I Like Dadant's WIRED FOUNDATION very much indeed"—says Jay Smith

THIS is Jay—without his bee whiskers. Down in old Vincennes (Indiana), he has a model queen-rearing establishment, worth a trip to see. Worth while to know Jay. He can talk real bee-language, and his queens are known the world over. The little poem opposite gives the sentiment of Vincennes' folks for Smith.

When it comes to handlin' bees,
Wadin' in among the trees,
Where a swarm has settled down,
There's a man that lives around
These parts here, understand,
That handles them with naked hand.
He puts them in their hives again
And seldom gits a stinger in his hand.
Cause he has made them bees his specialty.
He can tell, by their buzz,
Exactly what their wishes wuz,
Knows their language, low or high,
In the hives or on the fly.
Yes, this bee-man that lives out
In the country we're talkin' 'bout
Is Jay Smith, who helps to keep
The people in this country sweet.
(by C. C. Johnson)



View in Jay Smith's Apiary of 600 queen-rearing nuclei and his finishing colonies—a beautiful scene.

At the lower left corner is one of the fine combs he likes to see in all his hives.

He writes:

"I like Wired Foundation very much indeed. Using it in frames with slotted bottom-bars, the troublesome job of wiring is done away with. I enclose a photo of one of our combs. We have many more just as good."

When you plan your foundation buying, consider what this means to you

DADANT'S WIRED NON SAG FOUNDATION

Dadant & Sons, Hamilton, Illinois

DADANT'S WIRED NON SAG FOUNDATION

Makers of Dadant's Famous Foundations
Wired — Plain — Surplus

Sold by dealers everywhere — Write for name of nearest dealer.

BEESWAX—We pay 33c cash, 35c in trade f. o. b. Hamilton, Illinois, or Keokuk, Iowa, for your wax. Send it now before the moths get it!

GLEANINGS IN BEE CULTURE

MAY, 1925

EDITORIAL

OUR CORNERSTONE

REMEMBER at all times that improved bee culture is our end and aim, and we trust no one will hesitate to give any facts from experience because they may tend to overthrow any particular person or "hobby." If any of our special plans don't work, or if anything we advertise has had its value overestimated, here in these pages is the place of all others to set the error right.—From A. I. Root's "Introductory" in the first issue of Gleanings in Bee Culture, January 1, 1873.

THE Isle of Wight disease (*acarapis woodi*) has recently been found so widely distributed in Europe that the Bureau of Entomology has decided to make a further search to ascertain whether or not the mite causing this disease exists in this country. To assist Mr. Hambleton in this work, beekeepers are urged to watch their colonies for bees that show abnormal conditions and send samples to the Bureau of Entomology for examination. These sick bees can be placed in an ordinary queen-mailing cage or other receptacle and mailed directly to the Bee Culture Laboratory, Bureau of Entomology, Washington, D. C.

Diseases of Adult Bees

IN accordance with his promise to the Ohio State Beekeepers' Association last August, Governor Donahey issued a proclamation just previous to fruit bloom against the spraying of fruit trees while in bloom. He pointed out that this is destructive to bees and detrimental to the distribution of pollen, thus causing vast economic loss to beekeepers and fruit-growers. The governor, being himself a beekeeper, understands the importance of the beekeeping industry as well as the value of honeybees as pollinators. His proclamation should go a long way toward a better understanding of the importance of the honeybee to horticulture and agriculture.

Proclamation to Protect Bees

THE Ohio Agricultural Experiment Station has obtained some interesting figures on the increase in the yield of corn and oats following different kinds of clover, on the rich black soils of northwestern Ohio. The seven-year average increase of corn after red clover turned under was 24 per cent. Oats following corn in the rotation showed no increase over the check plots without a clover crop. After Mammoth red clover the increase of corn was 23 per cent, and of oats following corn, 8 per cent. After white sweet clover the increase of corn was 57 per cent, and of oats 22 per cent. It will thus be seen that sweet clover is far ahead of the other clovers in the increase of corn, as well as of the oats following the corn.

Clovers in Rotation Increase Corn Yields

NUMEROUS letters have been received at this office protesting against the newspaper item recently released by the U. S. Department of Agriculture regarding the small number of trips to the field a honeybee makes during its life and the small amount of nectar it gathers. Of course, the newspaper men, having heard of the "busy bee" all their lives, played up various headings that apparently have stirred up the wrath of many admirers of the honeybee. The figures given as to the number of trips and the amount of nectar carried are taken from a paper by Dr. A. E. Lundie, of South Africa, who spent several years in this country in the study of beekeeping in order to prepare himself for beekeeping work in that country. No doubt both the number of trips and the load carried on each trip would have been considerably greater if this experiment had been conducted in a better nectar-producing location than that in the vicinity of Washington, D. C. The Editor does not believe that this kind of publicity for the honeybee will do any harm. On the other hand, it may induce many to buy some of this precious food that requires so much effort on the part of the bee to produce.

Busy Bee Not so Busy

The "Swarm of Bees in May"

EARLY swarming has been reported in the South this season, and unless the colonies receive a serious setback there will be considerable swarming in May in the North unless measures are taken to prevent. The proverbial "swarm of bees in May" often results disastrously so far as the crop of honey is concerned, especially in the North. As a rule, swarming previous to the honey flow can be prevented if precautions are taken in time. A second story containing old dark brood-combs given to each colony before there is any possibility of the strongest becoming crowded goes a long way toward the prevention of swarming. If weather conditions are favorable during the month so that the bees are able to gather considerable nectar from minor sources, it is sometimes necessary to add even a third story previous to the main honey flow beginning in June. The queen should be given free range through the first and second story, but should be put down into the lower story at about the beginning of the main honey flow. Such a procedure, as a rule, tides the colonies past the critical swarming period of May, and, at least in some cases, results in but little if any swarming later.

Increase Previous to the Honey Flow

THOSE who are located where the main honey flow occurs relatively late, such as in the sweet-clover and alfalfa region, the buckwheat region, localities where the main honey flow comes from fall flowers, as well as many southern localities having a succession of honey flows, will be interested in two articles which appear in this issue, describing methods for making increase and requeening previous to the honey flow. One of these, by M. A. Gill, appears on page 296, and the other, by Jay Smith, is on page 300. While such a procedure may appear unorthodox to the beekeeper in the clover region and other localities where the main honey flow is relatively early, such management works out well in localities where the main honey flow does not begin until the latter part of June or early in July.

The advanced condition of the colonies this season suggests the possibilities of making some increase previous to the honey flow even in the clover region, unless adverse weather conditions in May should retard the development of the colonies. As a rule, increase previous to the honey flow should never be attempted in the clover region; but better wintering methods and the leaving of an ample supply of stores is resulting in so much larger colonies in the spring that clover-honey producers may sometime in the future find it possible to carry out some such plan as suggested by Mr. Gill and Mr. Smith.

Proposed Plan for Disease Control

ON pages 303 and 304 in this issue Dr. S. B. Fracker sets forth a set of principles adopted by the American Honey Producers' League at the Chicago meeting in February regarding the League's proposed federal legislation for control of American foul brood. As Gleanings understands it, the League has not as yet drafted a bill to be introduced in Congress providing for federal work in the control of this disease, these principles being only the expression of the sentiment of those present at the League meeting in regard to such proposed legislation.

No doubt most beekeepers will agree that there should be better co-ordination of disease-control work among the states, which might be brought about by federal assistance. Some means of preventing the interstate transportation of material infected with American foul brood is certainly needed. However, just how far the federal government should go in this matter is a question. If the federal government can increase the efficiency of inspection in the various states and can prevent the interstate shipment of material infected with American foul brood without interfering with the sale of honey and the transportation of bees across state lines when necessary, it may be highly beneficial. Actual inspection work is a matter for states, counties, townships, and individual beekeepers, rather than for the federal government; and it is presumed that the American Honey Producers' League, in drafting the proposed law, will make a careful distinction between the functions of the federal government and those of the states and counties.

Selling Honey by Measure

FROM information gathered for our "Who's Who" page in this issue, it appears that one state (New York) will require that the net contents of packages of extracted honey be stated in terms of liquid measure. If this regulation is enforced in New York State it may be adopted by other states and even by the federal government in working

out standard grades for honey. Honey has been sold by the pound for so long that this appears to be a move in the wrong direction. If sold by measure, honey would appear at a disadvantage when compared with maple syrup and other of its competitors which weigh considerably less per unit of measure than honey. This alone should be sufficient reason for beekeepers' protesting against this method of selling honey.

But a much more serious objection to selling honey by measure is that it would tend to encourage dealers to put water into the honey sufficient to bring its density down to the minimum permitted by law. Well-ripened honey contains only about 17 per cent of water, while some states as well as the federal government permit 25 per cent. Furthermore, if honey were sold by measure this would tend to encourage the production of thin honey. Great improvement has been made during the past twenty years in the quality of honey produced in this country by better care in having it fully ripened before it is extracted. Every beekeeper is familiar with the superior qualities of well-ripened honey as compared with honey extracted before it is fully ripened, so far as flavor is concerned. The problem of fermentation in honey not fully ripened is more serious than most beekeepers realize. Such honey may appear to be in good condition when it leaves the hands of the beekeeper, but if it is stored in the warehouse of the dealer for some time, and especially if it is carried over until the next season, fermentation often takes place, which destroys the flavor of the honey and results in the dealer's becoming disgusted with the honey business.

Present Status of Beekeeping

ON page 302 in this issue Mr. Byer brings up the interesting question of the purchasing power of a pound of honey today as compared with that of 20 years ago. Beekeepers are not alone in the belief that the readjustment in prices of commodities during the past 20 years has worked out to their disadvantage. From practically every occupation comes a similar complaint, whether it be in agriculture, manufacturing, commerce, or the professions. There is a glamor about "the good old days" that helps to emphasize this belief in the minds of most of us. One wonders how all groups could have lost without a corresponding gain somewhere along the line.

In beekeeping, much water has passed under the bridge since 1905. As Mr. Byer points out, the production of honey has been greatly increased, especially in the more favorable localities. This increase has been brought about largely by beekeepers operating a larger number of colonies rather than by an increase in the number of beekeepers. In fact, the number engaged in honey production is apparently decreasing at the same time that the production of honey is increasing.

Twenty years ago the honey that was shipped to market was handled largely by commission houses, there being only a few engaged in buying honey outright at that time. The market quotations, as published in the bee journals, indicate that commission houses and dealers in the United States were selling white extracted honey in 60-pound cans in those days at 6 to 7c per pound. Today dealers are asking about double that amount for the same grade of honey. Honey in carload lots was freely offered at shipping point at 4 to 5 cents per pound, and in some cases as low as 3 cents per pound, in the far West. Today prices at western points range from 8½ to 10 cents per pound in carload lots, which is equivalent to 10 to 11½ cents per pound in the East. Comb honey was sold in most markets by the pound instead of by the case, the price quoted by dealers in the East being 12 to 15 cents per pound, or about $2.50 to $3.25 per case in small lots. Today open-stock comb honey in similar sized lots is selling at about double these prices. Twenty years ago the market quotations emphasized comb honey, while today quotations are chiefly in terms of extracted honey.

With honey prices double those of twenty years ago, while the prices of many things the beekeeper must buy are double or more, the purchasing power of a given number of pounds of honey may be less than that of 20 years ago. However, production methods have greatly changed within recent years. Since the passage of the Federal Food and Drugs Act of June 30, 1906, most extensive producers have changed from comb-honey production to extracted-honey production, and at the same time have greatly increased their number of colonies by establishing out-apiaries. Not only this, but the average yield per colony has been greatly increased by better management, so that the beekeeper's position today is quite different from that of 20 years ago. He may not be able to purchase as much with a pound of honey as he formerly could, but if he produces five times as many pounds with but little if any more labor, he is in a better position than before. Not many commercial honey-producers would care to go back to their status of 20 years ago.

REQUEENING DURING HONEY FLOW

By Morley Pettit

A System of Queen-Rearing in Connection with Swarm-Control that Fits in with Honey Production

When Miss R. B. Pettit was developing the system of requeening which I am about to describe she always intended to write it up for publication, after she had perfected some more of the points on which she was working. Unfortunately her untimely death in February, 1923, prevented this; and since then I have been striving to recall the points she used to emphasize when we were talking over the day's work, as we did almost every evening or any other time we could arrange to be together during the active season. Frankly, I never took more than an academic interest in queen-rearing, and the articles on this most important subject were passed over to be read next time, which was usually never. My sister was just the opposite and read everything she could find on the subject, adapting all the ideas she could to the system she was developing. One afternoon during the last summer she was with us we happened to be alone together when she was doing some grafting and she insisted that I collect my patience sufficiently to graft just one bar of cells. I did so, and the work was fairly successful; and that little incident gave me courage to try to take up the queen-rearing where she had left it off, when the season came around again in 1923.

There is no doubt in my mind that it pays the commercial honey-producer to rear his own queens or have them reared in his own yards. Queens are thus saved the wearing journey by mail, something is gained by selection of stock, and if fairly successful he can rear a surplus so as to cull them and use only the best. Whether it is advisable to requeen every year is still in doubt. When going over the colonies in early spring there is no doubt in my mind at all, as the one-year queens —that is, the ones reared last summer— almost invariably have the best brood-nests. Then as the season advances there is less difference in evidence, and many colonies with two-year queens store more honey than some with one-year queens.

With our system of introduction there is practically no loss whatever, so the question simply resolves itself into the relative merits of the one-year queen to be removed and the young one which is to take her place. If at requeening time a one-year queen has good brood and a good stack of supers, and looks clean and active herself, I want to be very sure I have an equally good young queen to replace her before she is killed. In any case a sufficient number of one-year queens with a good crop record and other desirable features should be saved in each yard to make sure of a good two-year breeder next season. Occasionally a two-year queen doing excellently is wintered and used as a breeder after she has passed three winters. Not that she can be counted on for a good crop, but for the sake of trying to develop longevity in the strain of bees.

Rearing Queens in Each Out-apiary

We rear queens in all the yards, instead of having one queen-yard. It makes a lot of extra driving at the time they are being reared, but it simplifies the matter of brood supply for the nuclei; and once the queens are placed in half-super nuclei they can stay there until they have enough sealed brood to show that they are good layers of worker eggs. They are then "on tap" for use when queens are removed from colonies; for we do not wait, but put in a new queen immediately after the old one is removed. Our season is so very short that ordinarily a nucleus is used but once, and when the queen is removed it and its bees and her brood revert to the colony on which it is placed. This easy disposal of nuclei is another advantage of the distribution of queen-rearing to the various yards where the queens will be used.

The nucleus boxes are simply supers with a division-board and entrances on both sides. The board slides in end grooves to make it quite queen-tight, and the entrance holes have pieces of tin pivoted on a nail for closing or opening. The bottom-board of this special hive we call a nucleus board. It is a feeder board with the feed holes all screened, and a feeder board is what many call an inner cover, except that it has holes bored in it for using friction-top pail feeders. Each yard is equipped with a supply of nucleus boxes, nucleus boards, and division boards. When the second brood-chamber is given to the colonies early in May, several of these nucleus boxes are used as supers for this purpose at each yard. Of course, the division-boards are left out at this time and nine combs are used in the ten-frame super. We have them painted brown so as to be easily recognized, and they are technically known in the apiary language as "brown supers."

Our simplest queen-rearing method (which is common with all beekeepers, I suppose) is the saving of swarming or supersedure cells. The former are not

quite so desirable, because of propagating the swarming impulse, but splendid queens are secured in this way, and often they are matured earlier than one would get by grafting in the ordinary way. Supersedure cells, especially from good queens which have outlived their usefulness, are of the very best, and splendid queens will be secured from them. When natural-built cells are to be saved, the comb bearing the cell is placed in the nucleus box along with a comb of honey, an empty comb, and lots of bees. This goes over a nucleus board on top of the colony and the entrance hole is stuffed lightly with soft grass which will wither and fall away in about a day. To make up the four combs, two combs of honey or two empties may be used, as preferred; but one comb partly filled with sealed brood, the riper the better, is enough. The nucleus gets colony heat, and should be weak in bees to prevent swarming out with the virgin.

Grafting Larvae into Prepared Cell Cups

The great bulk of our queens are secured by grafting in dipped cell cups according to the Doolittle plan. A cell frame carries two bars of twenty cells each, and since receiving Jay Smith's excellent book on this subject I have followed his plan of dipping the twenty cell cups in one operation. At least "Joe" has, for I like to delegate to some one else the jobs that take time and patience, especially when that some one probably has a better supply of both than I have. The boys also help me collect royal jelly from outlawed queen-cells while going over brood-chambers. I used to use small glass vials for storing this. When carried in the pocket slight fermentation often blows the cork and the pasty substance lines the pocket instead of the cells for which it was intended. Jay Smith's suggestion of a small jar with screw-cap ends that trouble and incidentally permits collecting a much more copious supply.

The grafting-needle is one secured from The A. I. Root Company some years ago, and has a little spoon on one end for dipping the diluted royal jelly into the cells, and a hook on the other for lifting the tiny larva from the cells where it was hatched to the cell where we wish it to become a queen. This is the patience-testing job at which a bungling man so often falls down.

The first point is to secure a comb from the brood-nest of the breeding queen with at least forty larvae of the right size. Last year, which was my first season at the job, I made the mistake of taking them too large. This year I lifted larvae which were just a little bigger than eggs and had a nice bath of "milk" for each. Insert the hook under the "baby" just in the center of the C and lift gently. If it is too big to be moved it slides off the hook. Do not try a second time to lift it. If it is small enough and is approached in a proper manner it comes out on the hook well lubricated by the feed in which it was floating, and can be deposited safely in the larger drop of diluted feed you have previously placed in the cell prepared to receive it. When the two bars of twenty cells each are prepared in this way they are placed in the frame and inserted in the cell-starting hive which has been previously prepared.

Preparation of the Cell-starting Colony

Instead of the swarm-box recommended by some for accepting and starting work on grafted cells we have used queenless and broodless bees to good advantage; and Miss Pettit developed a system which fits in with our apiary work, and which I will now describe. At the beginning of the clover honey flow all colonies which are worth anything have two Langstroth brood-chambers with the queen laying in both. The best colonies also have a super over an excluder in which they are storing. On the day that the queens are being put down and confined to the lower story a very strong colony is selected, preferably one which has started queen-cells for swarming. Its queen is found and caged. A super is made up of dark combs which its bees have been occupying. The combs may contain some sealed brood, but on no account any open brood whatever, nor eggs. The colony is moved back from its stand and turned to one side. This super is placed on a bottom-board on the old stand, covered in the usual hive fashion, and a couple of empty supers set on top of it so it will look just like the regular hive. Nearly all the bees are shaken from the colony in front of this dummy hive, and the caged queen afterwards allowed to go free in her old brood-chamber. On the stand now is this queenless and broodless hive, made very strong by shaken and returning bees. Behind is the colony weakened, but otherwise normal.

The cell-starting hive just described is prepared about 10 o'clock in the forenoon and is ready for the frame of grafted cells shortly after lunch. It has plenty of honey and pollen in dark combs on which bees will feel at home, and has a strong swarm of queenless and broodless bees. The frame of cells is slipped into the space left in the middle where the bees will be clustering thickly, the cover replaced, and empty supers left on so the bees will believe they are at home except that it is a home without a mother. If there has been a good flow on for a few days, and all other conditions are

about right, they accept and start developing these cells as queen-cells. About twenty-four hours later the colony has to be put back on the stand and this cell-starting hive set on top as a super. Ten days later the cells are ripe and must be placed in nuclei for the emerging and mating of the queens—and that is another story.

Preparation of the Nuclei

For making nuclei for the placing of cells we prefer brood that is all sealed and some of it just emerging. In other words, we practically have to have brood that has been separated from a queen for at least ten days. Ten days after the queens have been put down there are oceans of such brood all over the yard. Ten days after grafting, the cells are ripe. This explains why we try, as far as weather and honey flow permit, to graft at each yard on the same day the queens are put down. Incidentally when queens are being put down at two or more yards on the same day, as they are when we have two or more gangs working at once, the senior man of each gang can fix a hive for me and I can fix one where I am working, all in the forenoon, then after lunch I can drive around and graft at several yards in the one afternoon. Next day the grafting is continued in the early afternoon, and later the hives are put together at the yards where grafting was done the day before. Yes, it means a lot of driving. I drove seventy-five miles one day, doing that kind of work last summer; but it has the advantages mentioned above. It uses the ripe brood from working colonies without robbing them, and leaves the queens right in the yards where they will be needed.

Ten days later, when both brood and cells are ripe, nuclei are made and the cells are placed. Incidentally, there will be cells on some of the brood from good colonies which can be saved in nuclei, as previously described, if the grafted cells have not yielded so large a percentage as was hoped. Our yard-work system calls for a visit every eighth day. This is oftener than necessary sometimes, but the Saturday yards have to pass on to the ninth day (Monday), and a rainy day throws all forward so that the week-end yards come on the tenth day, when young queens from natural cells are liable to be emerging; so we follow the eight-day schedule with the exceptions indicated. By this procedure the brood-chambers are being gone over one or two days before I will arrive to place the cells. At this first examination after putting down the queens the second-story brood in the supers is examined for cells, and the cells on the frame are counted. Besides caring for natural cells which are worth saving, nuclei are prepared for the grafted cells which must be placed later. The division-boards are inserted in the brown supers, and the quota of brood, honey, and empties are left, but nucleus boards are left stored.

When I come to place the cells on the tenth day I insert the nucleus board, stick a ripe cell into the honey just above the brood, and open and stuff with grass the nucleus entrance. I say I do these things, but I try to have a helper along to do his share of the work, and give me more time for attention to the important details. With standardized equipment and nuclei arranged in advance, one can place quite a number of cells in a forenoon. It has to be a forenoon, too, for if the grafter has made the mistake of picking one larva a little too old, he may find the older queen has already emerged and has set all hands to disposing of her prospective rivals.

Introducing Young Laying Queens to Full Colonies

In due course the nuclei are examined, those with queens laying are recorded, and the queenless ones disposed of. John McKinnon has given an obvious explanation of the serious losses of colonies we had when we tried the commonly advised plan of requeening with ripe cells. They often swarm with the mating virgin. Our method of introducing is so sure that we use is exclusively, and almost never trust a full colony to requeen itself with a cell. The method is simply to stuff the queen-cage with soft new comb crushed into a plug which is not hard, push the cage into the entrance, and leave it. Experience is necessary to avoid making the plug too hard. Sometimes the queen is confined too long by this means. She should be liberated in a few hours, not more than 24 at the very outside. I have used this method of introduction even when robbers were attacking the colony so as to make it necessary to pile grass over the entrance. There is almost never a failure. The cage is large and flat, nearly all wire screen, and very cheaply made by covering an L-shaped piece of wood about three-eighths inch thick and four inches long.

The method of requeening I have described is so simple that even I, who have always been a honey producer, first comb and extracted, then extracted exclusively, was able to fit it into the system of apiary work without very much of a jolt, when unfortunate circumstances made it necessary for me to choose between paying for a whole lot of queens to get some safely into use, and rearing a large percentage of our own. Perhaps it will make it all more clear to those who are still at the choosing place to run

over briefly our system throughout the season with reference to this matter.

Requeening in Connection with Swarm Control

As nearly as possible we visit each colony once every eighth day during the active season, especially after the beginning of the clover flow and the putting down of the queens. At that time every queen is found and her age recorded by the clipping record. At that time, or as soon after as weather permits, cells are grafted, and ten days later they are placed in nuclei ready for use as soon as the young queens begin to lay. On each visit the work of each queen is observed, and if she has cells for swarming past the egg stage, she is placed in a nucleus that is called a "take-out." The colony is left queenless until the next trip, when its cells may be used in nuclei, but are all removed in some way, and the colony is given a queen. If it is too early for any of the new queens to be ready the old queen is given back to the colony; but in every case the entrance introducing cage is used. To provide for cases where the queen fails or wants to swarm early, we get early queens from the South and place them in nuclei to be ready when needed. Incidentally, they may be introduced to the nuclei much more safely than to full colonies. I simply remove the paper over the candy (which they say we must not remove) and drop the cage on the floor of the nucleus. The colony heat from below keeps her warm enough and the young bees soon eat away the candy.

As fast as new queens are ready old queens are killed. Sixteen days after the placing of cells some of the queens will be laying nicely, and if the end of the honey flow is near they may be used, although we prefer if possible to let them develop sealed brood. If the colony has no swarming cells when the queen is taken out, the new one is caged at the entrance as described above, without delay. When, for instance, we arrive at the N yard my record shows that there are a certain number of nuclei old enough to have queens ready for use. I tell the men this and they start at the colonies while I go first to these oldest nuclei. My record also shows which colonies had queens killed and none introduced at the last visit; also which had queens introduced then. As fast as I can hunt out the queens that are ready for use I plug their cages with wood first and lay them at the entrances of the colonies whose queens were killed during the last visit, where the bees will take care of them until they are ready to be introduced properly. The others are placed at the entrances of colonies having old queens, the ones with the fewest supers first. Then I am ready to join in the work of going over colonies. Colonies whose queens were killed at the last visit have to be gone over very carefully to see that no queen-cells are left; and if by mischance a vacated cell is found it may be possible to find the young virgin and remove her to a nucleus where she can become mated without the risk of her flying away with the most of the colony. Then the cage of the queen is plugged with soft comb and pushed into the entrance. If there is unmistakable evidence of queens having emerged, so that the danger of a virgin being in the hive is too great, it is best to mark the record "chat," meaning "cell hatched," and leave it until next trip. If a comb of young brood is given at the same time the presence of a queen or otherwise will then be evident.

Where a queen was introduced last trip we look for her eggs, and if we see them or her we mark the record "q," and it is complete. If she was too securely fastened by the wax plug being too hard, so that her liberation was delayed no great harm results where the queen was killed at a previous visit; but where the queen had just been removed cells will have been started. The new queen, when released, may tear them down, or a young queen may emerge and cause swarming, or at least her death and replacement by a virgin, which accident gives the progress of the colony quite a setback. It is all in the plugging of the cage. If neither she nor her eggs are seen it is best to give a comb of young brood after destroying all cells; then on next trip either she is laying or fresh cells indicate her absence and a new queen can be given at once. We also examine the other colonies for swarming impulse, kill the queens which are marked for destruction, introduce their successors, and all the time watch the supering, which is a matter foreign to the subject of this article. The nuclei which are made queenless are united back to the colony by simply removing the nucleus boards and leaving them there as supers.

In opposition to the common advice to requeen in August, we find it a great advantage if we can get through with this important work while the bees are still working on clover and before they start trying to rob.

Georgetown, Ont.

[The Editor is responsible for much that has been said and written within re- years about requeening in August, since he has insisted that the young queens should be laying before the middle of August instead of later. Apparently many have understood this to mean that they should be reared in August.—Ed.]

HERESIES ABOUT HONEY

By E. R. Root

Some Experiences in Promoting Honey on the Redpath Chautauqua Platform Last Summer

As announced in this journal for September of last year, I spent the past summer on a Redpath Chautauqua circuit, giving popular lectures on bees and honey, concluding with demonstrations with the bees themselves before thousands of people every day (Sundays included) for seventy-seven days successively. On Sundays I had as my subject for the sermon-lecture, "God in Nature."

I knew that there are some vague heresies in the minds of the general public concerning bees; and when the proposition was put up to me to go on the Redpath Chautauqua for last summer it seemed to me that here was an opportunity to correct some of these heresies by meeting the public face to face—not a few dozens or hundreds, but thousands of people. The experiment proved so interesting and the lure of the footlights so attractive, that I have signed up to go out for the Redpath Chautauqua again for the coming summer, on another circuit.

The Pleasures and Pains of the Footlights

I will not at this time go into details much about the lure of the footlights or any of my interesting experiences. It was not only an experience but a vacation, even though there was some hard work connected with it, such as making trains at all hours of day and night, and, on top of it all, "scrapping" with the baggage-men about my bees. But the compensation of meeting the best people face to face, of feeling and seeing the audiences of from eight hundred to thirty-five hundred of all ages under control, was more than enough to offset all the loss of sleep and the aggravation of keeping track of my baggage, consisting of live bees, charts, enlarged photographs, and last but not least, "speaking togs." Once, after tire trouble, I had to go on to the platform with dirty street clothes and dirty face and hands because there was no time to wash up and change. I will not at this time go into details about filling my hat with bees and wearing the hat while I was giving the lecture, nor will I attempt to show why the bees did not sting, even though beekeepers sometimes brought me some of the worst bees they could find in the locality, bees they said had "e't 'em up." To handle ten thousand bees before the footlights without a cage and without any one getting stung is in itself a trade, as you will find if you try it. What I want to talk about now is some of the heresies that I met, and how I sought to correct them, in my talks.

Heresies About Honey

I found, as I expected, a sort of hazy and more or less general belief that much (but not all) of the extracted honey on the market is adulterated, and that comb honey is manufactured. These heresies, I am satisfied, grew out of gross ignorance on the part of the public and carelessness on the part of beekeepers. When the housewife and the grocer come across partly granulated honey they come to the conclusion that the honey was either adulterated or manufactured, because, as they say, "You can see the honey going back to sugar." This partly granulated condition was due to the fact that the groceryman and the housewife both had been storing their honey in refrigerators or cellars, where, of course, it would granulate; and this characteristic of

One of the hats of bees that Mr. Root wore when he was talking before his Chautauqua audiences last summer. This particular hat of bees was brought in by a man who said they "e't him up" a few minutes before. Mr. Root was not stung.

pure honey, because it is not understood, I feel satisfied, has spoiled the sale of possibly millions of pounds of honey that might otherwise have been sold. A housewife told me last summer, "I'd buy honey if I thought it was pure honey and not sugar," adding that she was not going to pay honey prices for sugar. The worst part of it is that some grocerymen have been telling their customers that they can not get anything but manufactured comb honey; that they suspect that much of the honey in bottles is adulterated, and then come back again with the usual remark (enough to make a beekeeper boil with rage), "You can see it's adulterated, because it's going

back to sugar." In this day and age of our pure-food laws such ignorance is inexcusable, especially on the part of grocerymen.

I knew that these heresies existed to some extent, but I did not suppose that they had such a strong foothold. I was, therefore, glad of the opportunity to make the correction last summer in my lectures face to face with the public. In every talk I showed that pure-food laws, both state and federal, are so rigidly enforced that adulteration of all foods has practically ceased. I explained the tendency of all pure honey to granulate when it is placed in refrigerators or when it is put in a cold place, and I believe I did some good. I am fearful that this heresy, deeply rooted as it is, can not be entirely met except by face-to-face contact with the groceryman and the housewife.

Perhaps the principal reason why these heresies have gained such a foothold is that some beekeepers have been putting out poor stuff, and that many more beekeepers have been at fault in not having printed on all the containers of their honey definite instructions, "not to store in a refrigerator or in a damp, cold place." There should be a further statement that "This honey is guaranteed by the seller to be pure."

How the Heresies are to be Met

Any one, however, who would go on a Chautauqua or any lecture platform and make the correction of these heresies his main theme would not get anywhere. He must first get the audience interested in the life-story of the honeybee—a story that is always interesting, no matter who tells it, and even thrilling when the live-bee demonstration work begins. The handling of live bees, picking them up by the handfuls, pouring them into a hat and wearing the hat, the shock of telling the audience that you are going to "let ten thousand bees loose in the tent," and then demonstrate that you can do it without any one getting stung—these are the things that will put the audience in a mood to accept the more serious things. After telling the life-history of the honeybee, and proving that bees when properly understood and handled are as gentle as kittens, then and not before could I correct these heresies of which I have been speaking. It was my plan last summer to ask those of the audience who were interested in cutting down the high cost of living (in short, how to make one dollar expand to ten dollars) to remain and I would explain the trick.

From a third to a half of the people would usually remain, and practically all the housewives—the very people I wanted to reach. The promise of telling how to cut down the high cost of living enabled me to explain the merits of honey as a food. If I attempted to talk about honey by going into the chemistry of it, explaining that it is made up of equal parts of levulose and dextrose and 20 per cent of water, I would drive the audience away before I could put across my message.

Of course, I get not a little newspaper publicity from my lectures both before and after. Here is the last announcement of a lecture, made by the Barberton Kiwanis Club. Among other things these questions were answered:

Did you ever have a bee back up to you and push?

Did you know that all male bees are drones?

Did you know that the male bee does no work? (Like lots of men, they let the women do the work.)

Did you know that the queen bee is boss? (Like most wives.)

Did you know that the male bee has no father? (He has a grandfather on his mother's side.)

A colony of very wild and vicious bees will be brought in by a local man, and Mr. Root will handle and tame them, and he will give the club a dollar for each time he is stung. He says you can bluff bees into making their stingers behave.

I didn't lose a dollar.

(Continued in June issue.)

One of the nine Redpath Chautauqua tents in which E. R. Root spoke on bees and honey to audiences of from one to three thousand people for 77 successive days last summer.

CARDINAL POINTS IN QUEEN REARING

By Allen Latham

The Size and Shape of Cell Cups Most Acceptable to the Bees

There are two systems of queen-rearing, with several modifications of each. The two are usually termed the Doolittle and the Alley methods—not that these two men were the originators of the two methods. They exploited the methods and hence the names. It was not by haphazard choice that I adopted the Doolittle plan. I have tried in the past forty years practically every method that is known and unknown, and after careful consideration settled upon the cell-cup method as being more completely under control and therefore more certain of uniform results.

Like many other beekeepers, I began my queen-rearing efforts by the use of natural cells from swarming colonies and by dequeening and getting emergency cells. The next step was to give bits of selected worker comb containing young larvae to queenless colonies. Efforts soon after that were made at grafting, the cups in the first trials being natural cups cut from combs. Up to this point queens were being reared only for home use and no commercial queen-rearing had been attempted. If one has few colonies he can get most excellent queens by grafting natural cell-cups. Such are avidly accepted by the bees and produce excellent queens. When, however, hundreds or thousands of cups must be grafted it quickly becomes difficult to accumulate enough natural cups. The next logical step was the making of dipped cups according to Dooilttle's directions.

Undoubtedly a great many beekeepers would think that the style of cup would make no difference in the quality of the queen produced, provided the bees accepted and completed the cup. From various writings in our periodicals we might well assume that the great problem in queen-rearing by the cup method is the getting of the cups accepted. We hear men boast of having 49 out of 50 grafted cups accepted, but we never hear them state how many of the queens from the 49 completed cups proved valuable. No, the great problem in queen-rearing is not the getting of grafted cups accepted—it is the getting of uniformly good queens.

Influence of Cell Cups Upon Quality of Queens.

So long as I personally made my cups I had fairly good results; but it takes time to make good cups by the Doolittle dipping method, and the work had to be turned over to assistants. Careful directions would be given and sample work shown. Almost invariably the average assistant would, by the time fifty cups had been dipped, be departing seriously from the sample before him. For, contrary to what many may think, the slightest departure from the best form may seriously impair the quality of our queens. If cups are too long, or too thin, or too thick, the cells built on them may not receive the 100 per cent of nurse-bee attention necessary.

As my queen business grew and I had less time for dipping, I soon found that the cups made by others, who had not by experience come to learn the requisite characteristics of queen-cups, were not yielding the best results. At this time I tried that modification of the Doolittle method which is sometimes called the Davis method. This method calls for the use of virgin drone comb. I got excellent results, but at times had almost complete failures, and soon found that unless I could keep supplied with drone comb of just the right stage of development I could not get uniform results. To procure sufficient drone comb with cells from one-fourth to three-eighths of an inch deep—fresh comb easy to work—proved so difficult that this method was soon discarded and the dipping method given new study. How could these cups be made by non-expert workers and still be fairly uniform? About this time I learned that a certain queen-rearing firm in the South would sell cups at so much per thousand. As the firm enjoys a good reputation, I sent for 3000 cups. The cups came all in one large pasteboard box in winter. When they arrived the box was only half full. Nearly a quart of cup fragments were mixed with a number of fairly intact cups. One batch of these cups was given a trial and the rest were at once melted into a wax cake. If that southern firm uses its own cups I fear for the quality of its queens.

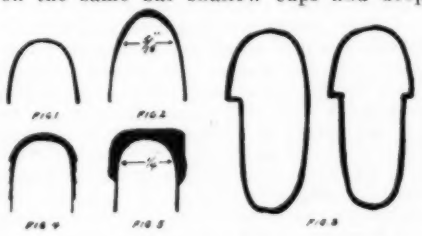
These cups were all too large in diameter, and in depth they varied all the way from one-fourth to five-eighths of an inch. Figures 1 and 2 offer cross-sections of these cups. These cross-sections are about actual size, with measurements shown within. Figure 3 shows the cells that such cups often produce. Bees will accept these cups and will produce some good queens in them; but they will produce a large percentage of worthless queens which must be thrown out or endanger one's reputation as a queen-breeder.

We must humor our bees. It is folly

to think that we can change in any way the habits of the honeybee. Those habits came into being possibly 5,000,000 years ago and have persisted ever since. They are much more fixed than the laws of the Medes and Persians. If we in any way depart from these natural instincts of the bees we obstruct their activities. When we graft queen-cups we wish those cups to get all the attention that a natural queen-cell gets under the swarming impulse. There must not be anything about a cup which might lead a bee to hesitate in its work on the cup. Cups must be almost identical or else bees will give extra attention to some and neglect others. To get uniform queens the cups must have uniform attention.

Importance of Uniformity in Cell Cups

I found that I got uniform results when I used cups too deep, provided all the cups were deep. If, however, I mixed on the same bar shallow cups and deep



Figs. 1 and 2.—Cross-section of queen cell cups that are too large. Fig. 3.—A cross-section of two queen-cells built on cell cups that are too large, showing how bees reduce the diameter of the built-on portion. Fig. 4.—Cross-section of queen-cell cup made by successive dippings into melted wax, each cup being slightly less in depth than the previous one. Fig. 5.—Cross-section of ideal cell cup with heavy base and thin edges.

cups, I found that on the second day after grafting there would be several cups with dying larvae in them. At this time I found to my astonishment that bees would accept readily a cup less than one-eighth of an inch deep. This is not so strange when one considers that, under pressure, queens lay almost to the edges of combs in process of building, and in the little shallow depressions found at the lower edges of old combs. It would seem that the shallow cup is not a departure from the natural instinct of the bee. It is true that queens will lay in drone-cells over half an inch deep, and in full-depth worker cells, but in how deep a queen-cell will she lay?

Working on this line of thought I sought to get a cup which would at the same time be acceptable to the bees and also easy of handling by the beekeeper; also (of prime importance) more likely to be properly made by the unskilled assistant. It will be recalled that Doolittle gave explicit directions. The molded dipping stick was to be inserted into the melted wax about half an inch, in actual practice varying from ⅜ to ⅝ under fairly skilful hands. The second dipping was to be a little less and so on until the final dipping was possibly ¼ inch. Diagram four shows the result. This cup had a heavy base, but thin edges, and if properly made it yielded splendid results. Unfortunately it is very difficult to do that dipping and make 500 cups all suitable. Try it.

How to Make Ideal Cell Cups

The plan which I now follow is to make molds a little smaller than those commonly used, having learned that nurse bees are much less likely to neglect cups slightly under-size than those at all oversize. The mold is first dipped into wax close to the melting point (melted wax ready to solidify) about $\frac{1}{16}$ of an inch. The following dippings are all the same—that is, about $\frac{1}{16}$ less than the first one. In practice the first dipping may vary $\frac{1}{16}$ and the following run to ⅛ less. The nurse bees will not object to that variation. Diagram 5 shows cross-section of the cup that results.

The object of the thin edge in queen-cups is to bring about rapid work upon the part of the bees in shaping the cups. Only queen-breeders realize the speed with which bees will transform queen-cups into queen-cells. The more rapid this work, the more likely the nurse bees are to stock the cups amply with royal jelly. The least hesitation or delay on the part of the nurse bees to start in and to continue the feeding of the grafted larvae will bring about the emergence of queens undeveloped and inferior. It is absolutely essential that the beekeeper humor the nurse bees to this extent if he desires to get uniformly good queens.

Nothing has been said here about the commercial queen-cups made by compression. I have never tried them, and am, therefore, not warranted in condemning them. I would say, however, without hesitation, that such cups could not yield the best results unless first submitted to the bees for a few hours before they are grafted.

It is only fair to call attention here to a well-known fact. Beekeepers are individuals, and as individuals they possess personal equations. One method falls into harmony with the personal equation of A, while B would find it entirely out of harmony with his personal equation. That is why so many people are puzzled in beekeepers' meetings. They come away saying: "I do not know what to do. A says do this and B says do that. The two things appear to me to be just opposed to each other." They are never actually opposed. Bees are bees the world over. Their personal equations

are the same with the slight variation due to difference of breeds. It can be stated as a general truth that all beekeepers must agree so far as the personal equation of the bee is concerned. So long as they hold that in mind they may adopt methods so unlike that the beginner sees in them nothing in common. Nevertheless they do possess one thing in common if they both produce good results. Their common possession is their working in harmony with the habit of the bee.

The next article in this series will treat of the developing cells, the factors having to do with their development, and the final resulting cells.

Norwichtown, Conn.

COMB-HONEY PRODUCTION

By M. A. Gill

A System of Management for the Sweet Clover and Alfalfa Regions which Eliminates all Swarming

The beekeeper, in planning to produce a crop of comb honey, is not unlike a general planning a battle. He must have a plan of attack, also a plan for retreat; for his enemy, the elements, may so disrupt his plans that a retreat is necessary; and he may be compelled to double back his increase if he closes the season with anything like a creditable showing.

Assuming that the season looks favorable, the beekeeper's first objective is strong colonies coming up to the honey flow with large reserves of brood. Don't make the rich help the poor, but give to each worthy queen a pound or two (as needed) of young nurse bees from the South, which will enable them to come up with the more fortunate colonies.

Making Increase Previous to Main Honey Flow

Now we come to that perplexing question of locality, whether to make increase or not. If the honey flow comes from June to July 15, it is better to take Dr. Miller's plan of breeding in two stories, then confine the bees to one story when putting on supers, using the surplus brood in making a few powerful nuclei. But in localities like my own, where the honey comes from July 15 to September 1, the maximum of both honey and increase can be produced.

Where colonies have been confined to a single story and all weak colonies made equal by April 10, as before stated, from 40 to 60 per cent will be building queen-cells by May 10 to 15. Now come ten days of fast and furious work. I prepare my new hives by placing a full comb of honey in each one and filling out the hive with full sheets of foundation.

How the Colonies are Divided

Now we are ready for business. Of course, the plan of shaking bees is well known to every one, but I will explain that I place the new hive on the old stand and place the parent colony directly back of it. I then choose a frame of brood with brood in all stages, being sure it has no cell cups with eggs or larvae; and if the queen is not on it I place her on it and hang it in the center of the hive. I then shake in bees until the number approximates that of a natural prime swarm.

I then carry the hive containing the brood to a new stand, but in my own case I load it on to the truck; and when I have made forty or fifty such artificial swarms I take these parent colonies to a new location, forming a new apiary from two old ones.

I find it advisable to go over these hives of brood in about six days, for by moving them to a new location they have retained most of their flying bees, so that they will soon be quite strong and some might cast a swarm; but if allowed only one cell that danger is removed.

Requeening to Prevent Later Swarming

Back in the old apiary the "shook" swarms are from six to eight days old and have from three to five frames of brood. They have good queens, but they are swarmers, and will swarm again when they become crowded, and will desert your comb-honey supers when you can least afford it.

It matters not how pretty these queens are, nor how much you dislike to do it, you must grit your teeth and kill every one of them; then in thirty-six hours give one of those fine queen-cells from the hives of brood that are now nearly ready for the young queens to emerge. Treat all colonies from which you made no increase in the same manner.

Now all colonies, both new and old, have young queens. The per cent of laying queens you will have by June 5 to 15 will depend on weather conditions at mating time; but you must anticipate some loss, and if you have not provided for this by raising your own queens, have some come from the South, for all must have a laying queen at this time or be doubled up with others.

Assuming that work has been thorough

and that the honey flow has been sufficient to back up those young queens, they will not need much attention until time to put on the comb-honey supers. The sections will go on clean and come off clean, for they will be filled quickly.

Management During the Honey Flow

You now have contented, fast-growing colonies having young queens. Give plenty of room and a large entrance. Then if the honey flow is right you will see quickly built, beautiful sections, for those young queens will keep the brood-nest occupied with brood, forcing the honey to the supers; and swarming from a crowded condition, while producing comb honey, will be reduced to the minimum.

Do not get the idea that you can't have a good strong colony if you use young queens during the last half of July and August with eight-frame hives; and with this size of brood-chamber the bees put up a larger per cent of honey where you want it.

Supers Prepared in Advance

In preparation for a crop of comb honey at least five supers for each colony should be prepared during the winter or early spring. Nearly every beekeeper has his own method for doing this work. I have for years used the Rauchfuss combined press, always putting in a bottom starter, thinking that the honey not only ships better but that a larger per cent of it would be No. 1 and fancy honey. But this year, acting under Mr. Demuth's advice, I am using the Multiplex foundation-fastener and am not putting in bottom starters but putting a full sheet coming within one-fourth inch of the bottom of sections.

Dampening 500 Sections at a Time

In wetting the sections for folding I first wedge the crate of 500 up tight so no water can get out on the face of the sections, then wet them with a fountain syringe, using quite warm water, as cold water will sometimes form in drops and roll over a dry surface, and not properly wet the joints.

The thorough and proper fastening of the foundation is very necessary; for what is more exasperating during a heavy honey flow than to find quite a per cent of starters down in the supers and the bees filling them with honey in a shapeless mass! If the foundation is properly fastened one can haul the prepared supers miles over quite rough roads and still they will be found intact.

I had hoped to send some illustrations with this article, but my shop and wareroom (24 x 52 feet) is so full of supplies that I could not show anything. Later, when the supplies are out on the bees and I begin casing and grading honey, I will try to show the process and the relative merits of the one starter as compared with two starters.

The comb-honey producer should have his shopwork complete in early spring. The man working for extracted honey, after he has on the supers, has but little urgent work until the honey flow, while the comb-honey producer has a strenuous grind until after the swarming season, whether he practices natural or artificial methods. After he has his colonies into that contented condition so necessary in storing comb honey, he has only to see to the minor details and give room as need-

M. A. Gill's home among the roses at Hyrum, Utah. Some of the beehives are shown beyond the trees at the right.

ed. For my own part, I like the shop-work, and, in fact, all the detail work that is required in producing comb honey, much better than that connected with the production of extracted honey. Besides, it is so much easier to handle foul brood when producing comb honey.

Hyrum, Utah.

SPRING AND SUMMER MANAGEMENT

By J. E. Crane

How to Prevent Early Swarming and Induce Prompt Work in Comb-Honey Supers

The best time to look up queens and clip their wings is before colonies get very strong in spring, as then there are fewer bees in the way and one can go over them faster.

We have found it an excellent plan, as soon as a colony gets strong enough, to give it an extra super of nice brood-combs, provided the season is not too far advanced. If given about the time of fruit or dandelion bloom, it is better than to put on supers of sections. This has many advantages. The quality of nectar from these sources is poor and unfit for sections; it enlarges the brood-chamber and so checks the disposition to swarm; it stimulates brood-rearing, which is of prime importance at this time, and it educates the bees to work and store their honey above the brood-chamber.

Inducing the Queen to Lay in Second Story.

Of course, one or two good combs of brood from the brood-chamber should be placed in the center of the upper story when first put on. As soon as clover is yielding well we can remove this super and replace with two supers containing 24 sections each. We need no bait combs in them, as the bees are accustomed to storing their nectar and working above, and will begin at once and fill them very quickly if the season is good; and soon we may raise them up, putting a fresh super of sections under as needed.

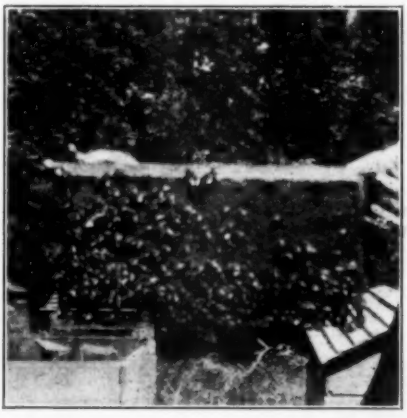
Disposition of Extra Brood-combs

The super of brood-combs we have removed may be used for various purposes. We may shake all the bees off and give all combs with brood to some colony not yet strong enough to work in sections, or to start a new colony, or to strengthen a colony we have shaken on to dry combs.

My, but isn't it just fun to manipulate your bees in this way when honey is coming in freely! You don't mind stings, you forget your backaches, and even your dinner bell will lose its charm.

How to Prevent Travel Stain

One thing I will mention right here lest I forget it. Bees will store in sections better if placed close to the brood, but the new combs are apt to become discolored unless honey is coming in very fast. We used to call this discoloration "travel stain," but it is not. It is brought about by the bees using bits of dark wax or cappings from the brood-chamber and mixing them with the new white wax with which they cap the new combs. It is worse in the center of the super than on the outside. To prevent this we use a honey-board so the bees have to go to the sides of the hive to get up into the super. Of course, it is not necessary to put it on until the bees are sealing the honey in the sections close to brood.



A good frame of sealed brood. Adding a second story at the right time in the spring stimulates brood-rearing and checks swarming.

If we could have our bees in just the shape we should like, we would have them all, or at least most of them, fill the brood-chamber in which they have been wintered full and running over by the time fruit trees bloom, but we are rarely so fortunate.

Then, by giving each hive another hive body filled with nice worker combs and plenty of honey, we can have satisfactory colonies by the time clover begins to yield. By removing these supers and replacing them with supers of sections we have our bees in the best condition for storing honey in sections.

Prevention and Control of Swarming

How shall we keep them in this condition? For as soon as we get our hives

full and running over with bees they are quite inclined to swarm.

Bees appear to have three major instincts—the rearing of brood, gathering nectar and pollen, and swarming. At first, swarming appears as a negation or contradiction of the other two, for after they have toiled all the spring to fill their

J. E. Crane in one of his Vermont apiaries in early spring. The colonies are in double-walled hives permanently packed.

hive with honey, and brood which they have nursed with the greatest care, they suddenly turn their backs on it all and swarm out, never to go back unless to repair the loss of a queen and issue again.

If we study the subject carefully we may conclude that there is nothing contradictory about swarming, but rather it seems an outgrowth of an intense desire to increase brood-rearing and room for storing nectar; or it may be the result of a high temperature or a lack of fresh air.

Treatment for Colonies Preparing to Swarm

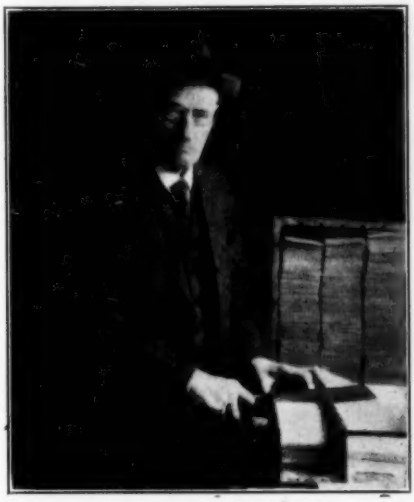
If we wish to keep our bees at home and at work in sections we must change the conditions by giving them an abundance of fresh air and more room in the brood-chamber, by removing every alternate brood-comb and replacing them with empty combs or frames of foundation. This may satisfy them if, when we do it, we destroy any queen-cells they may have started, and they work on to the close of the season satisfied. Often, however, it does not, and it may be necessary to remove all their brood-combs.

This seems to satisfy them almost always if done in time, but if left until the colony is nearly or quite ready to swarm, the bees may find it difficult to change their minds, and so swarm out. But if we change their brood-combs at the right time we may return the bees to the same hive and they will work on contented until the close of the season.

We may fill their brood-chamber with one or two good combs and the rest with well-wired foundation or all drawn combs or even combs two-thirds full of honey. In fact, I have filled them with solid combs of honey and all went well. They will move enough honey up into supers to make room for brood.

Strengthening Treated Colonies by Giving Emerging Brood

A week later we may give them two to four combs of emerging brood that we have taken from some other hive to check swarming, to keep up their strength, for a colony will weaken rapidly if there is no brood emerging in the hive, especially if honey is coming in slowly.



Mr. Crane at work cutting sheets of foundation for sections.

We have found this an excellent way to secure well-filled sections, for a colony so treated will often store as much surplus as one that makes no preparation for swarming.

Sometimes Best to Kill the Queen

But there are exceptions to this rule that should be noted very carefully. If we have a colony with an old or failing queen, this method does not work so well; for if given dry combs in place of their brood, the queen may lay a few eggs and again they may prepare to swarm.

Perhaps, after all, it is not a preparation for swarming so much as a desire to supersede their queen, and it is better for us to regard it in this light, at any rate, and remove the old queen at once,

cut out or kill all their queen-cells, and leave all their brood with them; for they will not swarm without a queen. All queen-cells should again be removed in eight or nine days, and a week later a virgin queen given them. In our experience, such queenless colonies will accept a virgin queen more readily than a fertile queen. All colonies not as strong as we should like, which are making preparations to swarm, should be treated the same as those having old queens.

Middlebury, Vt.

[Many beekeepers prefer introducing a young laying queen at the time of destroying the queen-cells the second time, usually nine or ten days after killing the old queen. This shortens the period of no egg-laying, which is often desirable during a short honey flow.—Editor.]

STRONG COLONIES AND NO SWARMING

By Jay Smith

Brood From Two Queens Produce Enormous Colonies Having no Desire to Swarm

As a rule, one of the great problems of the beekeeper is to build up his colonies in time for the honey flow. In various parts of the country in my talks to beekeepers on this subject, I have been told that, in their particular location, the problem is not to get the bees built up in time for the flow, but rather to hold them back. If the bees reach the peak of brood-rearing too far in advance of the honey flow, they begin to run down and are not at their best when the honey flow comes on. Such cases are in the alfalfa region and others where the main honey flow comes late. These conditions are somewhat similar to ours here when our main honey flow comes from smartweed in August.

A number of years ago, when I used a double brood-chamber, I employed a system of management that gave such good results that I describe it here. By this system the honey that came before this late honey flow was largely sacrificed, as far as surplus is concerned, for any such honey went into the brood-nest, which is a pretty good place for honey after all. Sometimes we get a little white clover honey here, and when we do not, we get honeydew. As soon as I saw we were going to get honeydew, I followed the plan given here. Since that time the sweet clover has come into the country, so I do not practice this method at present.

Queen-cells Are Prepared in Advance

When the bees are nearing the peak of brood-rearing, and just before the swarming-period is on, queen-cells are started. As this is a study in itself, it will not be treated here. The cells should be started in time so that they will be ripe at about the time that the bees reach the highest point of brood-rearing. If the colony is in a two-story hive, it should be divided and all the brood possible placed in one hive body.

A Combined Hive Cover and Bottom-board.

The hive containing combs with little or no brood is placed at the bottom, the combined cover and bottom-board is placed on top of this, and the hive containing most of the brood is placed on top, as shown in the illustration. The queen is put down in the lower brood-chamber. If the two hives are similar the entrance between them may be turned to the front; but if they are different it may be necessary to turn the entrance to the back for three or four days, until the old bees have deserted the upper hive and gone below, when it should be turned to the front. There are two reasons for this. One is that the hive usually slopes to the front, and if the entrance were at the back the rain would drive in. The other is that we wish to unite these colonies later, and if the entrance is in front the bees of the upper chamber readily find the entrance below, when the entrance between the two hives is abandoned.

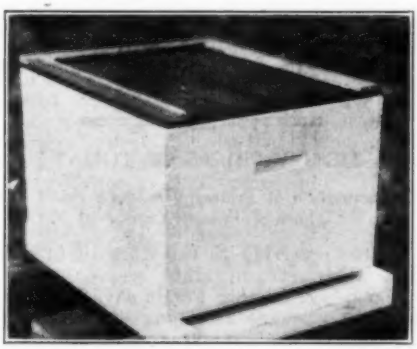
As soon as the queen is put below a ripe queen-cell is given to the upper story, which now is in reality another colony. If a honey flow is on, this cell will be accepted without question. If there is not, it is best to feed. Either a pepperbox feeder or a division-board feeder is good for this purpose.

A Certain Preventive of Swarming

I have not had much experience in seeing how this will cure swarming after the colony has the swarming fever, but as a preventive I never knew it to fail. I believe in most cases it will cure the swarming fever, for we have really made a division and the part that has the cells is deserted by many of the bees, so that the swarming fever is cured much the same as it is when the swarming colony is moved to a new location. The queen, being in the lower hive that has little brood, will not swarm but will devote her energies to filling the hive with brood. The brood in the upper hive will emerge and the young queen from the ripe queen-cell that was given will mate

and will soon be filling the upper hive with brood and bees.

As the late honey flow comes on, both hives are running over with bees and both are filled with brood. Now hunt the old queen in the lower hive and kill her. Lift the lower brood-chamber from the bottom-board and put the upper hive body in its place. Lay a newspaper on that, put on as many supers as you think



Combined hive cover and bottom serves as cover for lower hive and bottom for hive placed on top.

best, and on top of all place the hive body that originally contained the old queen.

A Tremendously Strong Colony

You now have a colony of great strength, headed by a young queen, and with brood on top and supers between you will never have a swarm that year. If you have a good honey flow you will be surprised to see how much honey such a colony will pile in. Your combined bottom-board and cover is set away to be used again next year. This board is very easy to make. If you have some thin super covers they will do, and all that is necessary is to tack on some strips of lath on the two sides and one end. If you wish to use this super cover as a cover, these pieces of lath need not be nailed fast, but can merely be laid in place.

This same principle has been employed by setting the extra hive to one side of the parent colony, but in that case a bottom-board and cover are necessary, as well as some sort of stand. In the method described this thin board serves as a hive cover for the lower body and a bottom-board for the upper body. If one does not have the thin super covers, they can be easily and cheaply made from cheap goods boxes. In case one does not use a double brood-chamber, an extracting super may be used as the bottom hive.

What Is Gained in This Management

Let us see what advantages are gained by this management over the one where the double brood-chamber is left alone with the old queen. By the latter method there will be two swarming periods, one when the colony reaches the peak of brood-rearing in the spring, and another when the honey flow comes on later in the season. You have an old queen in the hive, which will be more apt to swarm and will not keep the hive crowded with brood as does a young queen. Lastly, you get much less honey by having an old queen and less brood.

By the method I have described you have no swarming. Swarming is prevented during the first period by virtually removing the brood from the queen. It is prevented when the main honey flow comes on by having a young queen in the hive and by having brood above

Combined cover and bottom in place between the two hives.

the extracting supers, thereby coaxing up the bees from the hive body containing the queen. As we have both bees and brood from both queens we have a stronger colony than is possible by using one queen. When the flow is over the brood in the upper hive body has emerged and the latter is filled with honey. It is now a food-chamber that will feed the most greedy colony till honey comes again. We have a strong colony headed by a young queen that will winter well. Lastly, we have a larger crop of surplus honey—far greater than would be possible with the other method. This, too, with no extra outlay of money except for this combined hive cover and bottom-board that can be made for twenty-five cents.

Vincennes, Ind.

FROM THE FIELD OF EXPERIENCE

PREVENTION OF SWARMING

A Simple Plan to Eliminate Swarming by Which the Colonies are Requeened

Here is a swarm-prevention plan for extracted-honey production which provides for requeening during the honey flow without making the colony queenless.

We will suppose that the colonies are in two-story 10-frame hives until the start of the honey flow, all swarming having been prevented and no queen-cells started before the honey flow starts. We will take it for granted that the honey flow starts June 5.

June 5.—By smoking or using the carbolized cloth the queen is driven to the lower set of combs. The upper chamber is removed, a queen-excluder placed on the lower brood-chamber containing the queen. The necessary super or supers are added, and on top of all is placed the upper story of brood.

June 13-15.—All queen-cells but one are removed, or if the stock is not desirable a ripe queen-cell from better stock is put in the upper story. The brood-nest containing the queen and this upper story are then interchanged and a ventilated escape-board with the hole closed is placed below the story of brood containing the queen. An upper entrance is given by shoving the super ahead.

June 30.—If the young queen is found laying below, the old queen above is killed and the ventilated escape-board removed, when more supersedure cells will be started, which can be used for increase by removing the upper story 10 days later, or the cells may be destroyed and the brood left to emerge. I may be over-enthusiastic about this plan, but it has several fine features. There is no break in brood-rearing. The colony is really queenless only one or two days. The queen-cells are built under the supersedure impulse, and, all of the brood being sealed, no more queen-cells are started.

In other words, this plan is the same as most plans of requeening during the honey flow, with the above advantages. If one does not care if a small percentage of the young queens are lost the two hive bodies can be united at the close of the season without finding the old queen.

Burgoon, Ohio. H. J. Walters.

[Under some conditions this simple method of swarm prevention should give good results if applied before the bees have developed any desire to swarm. There is danger, however, that some colonies will swarm soon after the young queen emerges, the swarm being accompanied by the young queen, thus leaving the lower brood-chamber hopelessly queenless. If conditions are such that this may happen it would be safer to introduce a young laying queen having her wings clipped at the time the queenless brood-chamber is put down below the supers.—Editor.]

HONEY PRICES OF TODAY

A Comparison of Present Wholesale Prices with Those of Twenty Years Ago

After referring to the work of provincial apiarists and other pedagogues of beekeeping, Morley Pettit says, on page 83, of February Gleanings: "Although production has increased many fold, we are selling for better prices than when I first started beekeeping and retailed best clover honey at nine cents per pound." My experience has been contemporary with Mr. Pettit's, and while I admit that the quotation is literally true so far as figures are concerned, yet I unhesitatingly make the assertion that we are both selling for actually less net returns than we did 20 years ago, taking into consideration the advance of commodity prices on all things used by the beekeeper both in his household and in his beekeeping operations. At the time when we were retailing extracted honey at ten cents (the lowest price we ever sold for) bread was delivered to our home at 8 and 9 cents per loaf. This morning the baker just called, and I believe the charge is 22 cents for a smaller loaf than we used to get 20 years ago at 8 cents. Compare the retail price of honey at 10 cents in the old period of 20 years ago, when bread sold at 8 cents, with honey now retailing (with us) at 16 cents and bread at 22 cents.

As already intimated, the same ratios of increase on all articles used by the beekeeper are just as great as in the illustration I have given, as anyone must admit when he compares prices of hives, frames, and other supplies, and prices for making up foundation today, with prevailing prices for these commodities twenty years ago.

The lowest price we ever had to take for clover honey, in a wholesale way, was 7¼ cents in large barrels, the package costing at that time less than one-fifth of a cent per pound. I know what the

members of the Co-operative realized for their honey in 1923, and also what many independents got for their crop. In the February issue of Gleanings I note that clover honey recently sold in the United States at 9 cents. Every one familiar with the situation in Ontario knows that marketing is a serious question at present. They know that we are up against tremendous over-production, so far as home consumption is concerned, and that we now depend upon the export business to give us a living margin of profit in our business. Production has increased many fold, as Mr. Pettit truly says, and I still think after more mature judgment and observation, that much of this increase in production was brought about by the booming methods so prominent in many colleges some years ago. It has been my privilege to meet many large producers in Canada and the United States during the past 20 years, and I am safe in saying that at least 90 per cent of these men have agreed with my views.

Not so long ago we engaged a young man as a student. He was not in our home 24 hours until I was amazed at the optimistic views held by him in regard to the profits to be made in beekeeping. He had had no experience at all, and professed to have no capital to depend upon for help. Yet he confidently stated that he expected to go into commercial beekeeping. Three hundred colonies was his limit, if I remember correctly, and he expected to amass sufficient wealth to retire in twenty years. When asked as to where he got such impressions, he mentioned well-known teachers of apiculture. Making all due allowance for any possible exaggeration in his statements, a very rosy picture must have been painted by the instructors of the student in question. Needless to say, after a few weeks' work in the apiaries and a few stings, this young man became disgusted with the outlook for easy money and decided to take up some other calling that offered easier work, fewer stings, and more money than beekeeping offered. Those men who have combatted the idea of such boosting of the industry are not reactionaries by any means, but they have viewed with wonder the spectacle that was presented, when no other single industry or profession did likewise.

I have faith in beekeeping as a means of giving a good living and a bit more if one works hard and has a fair location. But with foul brood to fight on every quarter, reduced prices for honey, and heavy operating expenses, I certainly do not think that beekeeping is a sinecure; and under existing conditions we have no thought of further increasing production. In fact, we are now operating 200 fewer colonies than we did two years ago.

Some will say the standard of living is now higher, and that we spend more than we should. By "we," in this case, I mean almost everybody, including beekeepers. That may be so, and I suppose most of us will say that the extra price is worth while; but that does not alter my contention that honey is selling for less today, comparatively speaking, than it did 15 or 20 years ago. J. L. Byer.

Markham, Ont.

[Any artificial stimulation of beekeeping, like that of any other industry, is certain to correct itself within a very short time. Its effects can be only temporary. Not only beekeeping, but all agriculture, as well as most other industries, have recently felt the correction following the artificial stimulation incident to the great war. When beekeeping becomes unprofitable because of poor market conditions, production will automatically be reduced, and when it again becomes profitable production will be increased whether we like it or not.—Editor.]

FEDERAL DISEASE CONTROL

League's Proposed Plans for Control of American Foul Brood by U. S. Government

The League plans for federal assistance in reducing bee diseases, published last fall, have resulted in discussion and correspondence from all sections of the United States. After considering the opinions expressed in letters, in the various bee journals, and in talking over the subject with producers from different sections, the Bee Disease Committee proposed a set of "principles" and these were adopted by the League Convention at Chicago. They are believed to cover the sentiment of all those interested in the industry in the United States, so far as it could be determined, as a foundation on which any federal plan should be based. They are given in full in the following paragraphs:

1. That the following facts should be given national recognition: First, American foul brood is one of the most important and serious factors in the cost of honey production; second, the prosperity of the industry is a matter of national concern; and, third, that federal assistance of the states in a plan to reduce or eliminate American foul brood losses is justified.

2. That field work on such a project must be carried on through state organizations at their request and consent, and under state laws. The federal constitution is sufficiently definite to guarantee this provision.

3. That the federal department must retain the right to determine the policy and plan under which federal funds can justifiably be employed.

4. That the extent of territory or the number of states within which federal funds can be employed at the beginning will depend on the amount of the appropriation, and that the determination of this question can best be left with the Secretary of Agriculture.

5. That national legislation for preventing the interstate transportation of American-foul-brood-infected material is needed, but that such legislation must make possible the movement, under federal or state certification, of bees and used equipment from healthy apiaries and localities.

6. That research by the federal department and the state experiment stations on several problems is of pressing importance, such problems including improved methods of disinfection, the role of honey on the commercial market in the distribution of bee diseases, the relative importance of queen-cage candy, broodless extracting-frames, and other used equipment, in such distribution, and the degree to which local robbing and bees in bee-trees and rock cavities present obstacles to the elimination of American foul-brood. Such research should be undertaken at the earliest possible moment and should be continued throughout at least early stages of the federal-control campaign.

7. That bee-disease-control work must not be permitted to disorganize the work of the Bee Culture Laboratory, the investigational work of which should continue unhampered by extensive administrative activities.

It will be noted in particular that there is no tendency to force on any state any action which its citizens do not desire. The constitution of the United States prevents federal officers from entering private property within the states, and therefore would not permit apiary inspection work to be done without the states' consent. Under no circumstances could the federal department take control of any funds appropriated by the state, nor could federal men carry on any field work even with federal funds, except under state laws.

It is also of interest that the League comes out definitely in favor of the establishment of certificates for the movement of bees and used bee supplies. The League was unanimous in recommending that any federal law on the subject must provide through certification for the moving of bees (both in packages and on combs) and used bee supplies from healthy apiaries and healthy districts to other points in the United States. The reason for this is that apiary practice in certain Rocky Mountain states where migratory beekeeping is practiced, in those southern states which ship nuclei, and in New England, where bees must be moved about for purposes of pollinating plants, necessitates provisions for the shipment of bees on combs. It was felt that while individual states or parts of states which believe their territory to be reasonably free from bee diseases might be justified in protecting themselves by embargoes and quarantine measures, such provisions can not be authorized in a federal law on the subject.

Principle No. 6 recognizes the importance of experimental work, and the League is on record as supporting this work, whether for bee-disease control or otherwise. The gradual cutting down of the appropriation to the Bee Culture Laboratory since the war until the laboratory is now severely handicapped in its activities, is a loss to the entire industry. This support cannot be replaced without the beekeepers' backing, and the League is in thorough sympathy with the development of the laboratory and adequate appropriation for its support.

Communications are seen from time to time referring to the distribution of disease in honey shipments. Several states are apparently successfully preventing the sale of honey from infected colonies when they are found, and this may be practicable in the place where the honey is produced. Such a measure, however, can not well become a part of a federal law because the certification of honey for human food is both unnecessary and impracticable.

Federal co-operation in bee-disease control is in many ways one of the most important proposals which has ever been made with respect to the beekeeping industry. The success of this legislation and the financial support carried with it would be a godsend both to the honey-producers and the breeders of bees. To the former, it means the maintenance of healthy apiaries and the consistent production of a profitable crop of honey. To the latter it means the establishment of authoritative inspection certificates issued under federal regulations and meeting general recognition, as a substitute for the present plan of a wide variety of conflicting state regulations. To the industry as a whole it means reducing American foul brood to a point where it is no longer a factor in commercial honey production and where it is entirely absent from hundreds of counties and many entire states.

S. B. Fracker.

Madison, Wis.

SIFTINGS

by J. E. Crane

We have found this season a plate warmed by electricity far preferable for fastening foundation into sections to one warmed by an oil lamp, and are much pleased with it.

* * *

On page 234 A. N. Clark has something to say of a way of protecting bees that have been wintered in the cellar, after they have been placed on their summer stands. He would use light cases made of celotex to set over them. A good idea surely, as such a case will not only protect from the wind, but it will help to retain the heat of the hive.

* * *

The story of the agency of bees in the "Pollination of Orchard Friuts" is always interesting, and that by Glenn W. Herrick in April Gleanings is no exception. How the heart of the keeper of bees swells with joy and pride as he thinks of the value of his bees to the world! but how it sinks within him when he remembers how many bees are destroyed by poison, as shown on page 231!

* * *

R. Broyles makes a good point on page 233 in telling how to secure a crop of tulip honey. He says two brood-chambers well filled with brood and bees early in the season are necessary. Dr. E. F. Phillips told me some years ago that they did not know the value of the tulip trees about Washington, D. C., until they were able to secure powerful colonies in early spring by winter packing and abundant stores. This method works just as well for securing clover as for tulip honey.

* * *

I was taught in my youth to tell the age of cows by the rings on their horns, and now Mr. Latham would have us tell the age of bees by the broken and ragged edges of their wings. He may be right, but I think a better way is to watch the way they build up in the trying weather of spring. The long-lived bees will build up rapidly, while colonies of short-lived bees find it uphill business. The old bees seem to die about as fast as young bees emerge and the colony does not become strong until late in the season—often too late to be of much value.

* * *

On page 216 Allen Latham tells us how to select queens for queen-rearing. Three qualities that the workers of such a queen must show are vigorous honey gathering, longevity, and gentleness. I believe most beekeepers will agree with him in this, although some would like to add that of pleasing color. Whether the shape of the abdomen of a queen is a quality of great value seems to me doubtful. It used to be thought seventy-five years ago that one could tell very accurately the mental capacity of a man by the size and shape of his head. Scientists are not so sure about it today. I believe most beekeepers admire and prefer a large rather than a small queen—or at least one with a large abdomen; and yet we sometimes find our most prolific queens small of abdomen and of inferior appearance.

* * *

Mention is made in an editorial on page 213 of the story in McCall's magazine, "The Keeper of the Bees." One or two sentences interested me greatly. The scout is made to say, "One time I asked the Bee Master if I couldn't see God, and if I couldn't touch Him, how I was going to know that he was here. And he said, 'Because of the hair on a bee.' So that is one of the ways you can know. Then there are a lot of ways you can find out about God on account of how he made queen bees. A beehive is just full of miracles, and signs, and symbols, and wonders."

* * *

Reference is made in the same editorial to the recently published book, "The Spirit of the Hive," by Harper & Brothers, written by Dallas Lore Sharp. It has seemed to me that this work of Sharp's is far superior to that of Maeterlinck. While Maeterlinck's work may surpass that of Sharp's in poetic fancies, Sharp keeps his feet on the ground and has confined himself to facts which he is able to present in such a way as to change the somewhat monotonous work of caring for bees into poetry.

* * *

Mr. Byer has two paragraphs on page 240 that sound well taken together. In one he says he listened *a few weeks ago* to a most interesting address on bees and honey, especially "explaining the uses of honey and its value as a food." He said he thought an address like that worth thousands of dollars spent in printers' ink for advertising. In the other paragraph he says, "Honey sales have been much stimulated during the *past few weeks* and it looks as though all of last year's crop would be cleared off the board by the time the 1925 crop is available." The reader will note that the increased sales began about the time this unusual lecture was broadcasted by radio. The italics are my own.

FROM NORTH, EAST, WEST AND SOUTH

In Southern California—No rain of any consequence had fallen since our last letter until March 29, since which time there have been intermittent showers. To date there have been between two and three inches of rainfall in March and April. This amount gives the farmers much encouragement, as it is a great help to all growing plants, especially the grain on the unirrigated land, which was needing rain very badly.

We feel that any rain is a help to the beekeeper, but just how much this will help in the aggregate is not easy to determine. The oranges are blooming quite freely in many places, and, of course, when it is cold and rainy there is just that much time lost for the bees to gather the orange nectar. This may be made up in benefits derived from the rain. We find that the orange blossoms secrete nectar much more freely when the ground is well soaked by rain than when it is wet by irrigation.

Beekeepers had already moved most of their bees to the orange groves, and, generally speaking, had their colonies in good condition to gather a crop.

The sage and wild buckwheat will be much benefited by the recent rain and may yet give the beekeepers on the unirrigated ranges enough honey to make them feel that they are a real factor in the business. The white sage and the buckwheat had made very little growth, and the black sage had only started in most places. In our opinion, the wild buckwheat plants will respond more readily to this moisture than any other of the honey-producing shrubs mentioned and will likely give us some returns.

Those colonies on which we put the building paper between the super containing the honey and the brood-chamber, leaving only a small entrance between, surely came through fine and strong. We think that this can be practiced very profitably in California, especially if the spring is cold and backward and the colony needs to be kept in a compact form in order to hold the temperature at the right degree for brood-rearing.

I recently visited the warehouse, workshops, and central extracting plant of one of the large honey-producers operating in the orange district. This man tells me, and sustains his assertion with a good argument, that he can profitably bring honey to a central plant from a distance of one hundred miles. He figures that he can take carrying boxes with frames of foundation or drawn combs, go to the apiary, and take out combs of honey ready to extract. These he replaces with the empty combs or foundation. The honey is brought to a central plant and extracted. The trip gets the combs of honey to the central extracting plant, gives the bees plenty of empty combs to work on, and all is done in one day. L. L. Andrews.

Corona, Calif.

* * *

In Arkansas—This spring has been a wonderful one for weak colonies. You should see how they have developed. Last night (April 2) we had a good warm rain that is also good for the honey plants. We who ship bees north in packages should not be delayed as we were last spring on account of the cold, backward weather.

The legislature of Arkansas suspended operation without enacting a much-needed bee-disease law, and I am inclined to believe that it is mostly the fault of the beekeepers rather than of the legislature. It appears that but few beekeepers were active in acquainting the members of the legislature with our needs. I am wondering if this is the condition in other states, that the beekeepers are inactive along this line, as well as in regard to their state association.

Our trouble in Arkansas is not so much foul brood as it is box hives and gums and the little black bees. If all who have bees would keep them in movable-frame hives it would be an easy matter to induce them to requeen, and in time we would be rid of the blacks. We also need an extension man in beekeeping to educate the farmer beekeepers.

I have not at hand the figures on the quantity of inferior syrups that are shipped into Arkansas, but I have good reasons to believe that there are many carloads. Quite a few cars of honey also come to the state. The Extension Division of the University of Arkansas should do something to develop honey production. There can be made only a poor guess as to the number of cars of honey that are lost to Arkansas for the lack of facilities for gathering and storing it. So our great problem is production. Marketing is not now, nor will it be a problem for us until we can at least supply our local trade.

Soon it will be time to prepare for the fairs. If all beekeepers realized how it boosts sales to have on hand large attractive exhibits of honey at the State Fair I am sure they would send the superintendent of the apiary division a nice

exhibit. The manufacturers of bee supplies have for years placed exhibits of their goods at the state and district fairs, but in many cases not a pound of honey has been exhibited by a honey producer.

Elba, Ark. J. V. Ormond.

* * *

In Oregon—Spring honey plants in Oregon and presumably throughout the West are the earliest that I have seen them for a number of years. The honey flow from Oregon maple, which in the past has varied in its starting period from March 20 to April 20, this year started about March 10. There has been an exceptionally heavy bloom on the maple and weather conditions have been such that the bees have been able to gather a good supply of early honey to carry them through their spring brood-rearing. Dandelions are in full bloom and most varieties of fruit trees are beginning to open.

The effort of the State Beekeepers' Association to secure the passage of a law providing funds for bee-disease control in Oregon failed, when the law was indefinitely postponed. It is probable, however, that an effort will be made again when the next state legislature meets.

The state bee specialists in several of the northwestern states are endeavoring to co-operate in arranging the annual meetings of the various state associations in a series so that speakers may be secured from the East. The early part of January is being set aside for this series of meetings. Utah, Wyoming, Montana, Oregon, and Washington are co-operating. California may also come in. The next meeting of the Oregon State Beekeepers' Association will probably be held at The Dalles. The Dalles was selected for two reasons: First, to bring the meeting closer to central Oregon beekeepers; and, second, to be in closer contact with the extensive fruit-producers of that district.

The honey market is just about the same, with honey moving in a moderate way. H. A. Scullen.

Corvallis, Oregon.

* * *

In Minnesota—After one of the severest of Decembers in its history, during which the mercury stood 17 degrees below for seventeen days, Minnesota enjoyed the most pleasant three months of a new year in the memory of the oldest inhabitant. The month of March was marked by high temperature, sunshiny days, and the arrival of spring. The beekeepers had their bees on their summer stands by the 20th of March. On the 29th the soft maple and poplar were in full bloom. The willow came in on April 3, followed by box elder and elm on the 5th, and at this writing, April 7, a regular honey flow is on. The first dandelions are beginning to appear on the lawns. Clovers never looked better. The winter losses are unusually small and one can hear the most optimistic hopes for a phenomenal honey year.

Sweet clover, of course, is the talk of the state. Thousands of new acres of this great honey plant will be added throughout the northwest this spring. I recently attended several short courses throughout northwestern Minnesota. The beekeepers in that section stoutly maintain that last year's honey crops were somewhere between 200 and 500 pounds per colony. As a result of this phenomenal crop beekeepers' projects have been adopted in all boys' and girls' clubs in that country. Wide-awake beekeepers' county organizations have been organized. The commercial clubs, especially in Crookston and Morris, have manifested a lively interest in this new great industry.

But what will happen to the honey industry of the United States when the northwest begins to dump hundreds of carloads of honey in the market centers? How are we going to increase the per capita consumption to swallow up that surplus? How shall we keep the honey prices from dropping to still lower levels? The best suggestion comes from Mr. S. E. Harris, a banker of Minneapolis. His idea is to establish a great honey export firm in the great harbor of Duluth, Minnesota, with Red River Valley beekeepers' organizations as stockholders and correspondents. It should be the duty of the exporting corporation to sell honey to England, Germany, and other European countries, and probably along the Atlantic coast cities, sending their cargoes east by water. The county agents should work for assembling honey in different market centers and ship to Duluth by carloads only. This plan, if realized, will stabilize honey prices in the United States and dispose of a surplus which is bound to become enormous in a few years.

The Minnesota State Fair offers this year $1200 in prizes for State Fair honey exhibits. In addition to this glass cases are being provided for all honey exhibits, which is the only sanitary way to exhibit honey. Twenty thousand square feet have been assigned to honey exhibits in the Agricultural building.

The extension work of the university keeps one man busy organizing and visiting county organizations, organizing and keeping up boys' and girls' honey clubs, and attending different farm gatherings throughout the state.

A short course for boys and girls is being held this week at University Farm, St. Paul. About 60 members are attending. A short course for beekeepers in general will be given at University Farm, St. Paul, May 19 to 22, inclusive. More short courses are planned for different parts of the state throughout the summer.

St. Paul, Minn. Francis Jager.

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In Porto Rico— The present wholesale price of Porto Rican honey is very encouraging to the larger producers. It is bringing a higher price than it has for several years. There is quite a demand which cannot be supplied at this time of the year. The European sales made last fall and winter have helped to boost the price. It will pay the larger producers to store their honey until about February, when the peak of the market is reached, and then sell. Much honey was sold as low as 60c a gallon last summer, which would now bring 85c to 90c a gallon, Island prices.

There is some little talk on the Island about relieving the overstocked condition here by selling bees in the North. Some say that ten-frame hives of bees, including hive body, ten frames of bees and brood, with the hive bottom, can be delivered in New York or Baltimore at about $6.00 to $6.50 per hive. If this is accomplished, it would be good business for the beekeeper here as it would ease the overstocked condition and at the same time give the present owners some return for the stocks on hand. Last of all, it would be giving the northern beekeeper extremely cheap bees. There is no foul brood on the Island. At this price they would be more profitable than nuclei or package bees to the beekeeper located within a few hundred miles of either of these seaports.

The winter has been about average and the bees are in fair strength for this time of the year. Many of the apiaries which did not receive sufficient attention on account of poor returns last year, have lost quite a number of colonies because of queenlessness or need of requeening. When colonies become weakened down here both the lesser and the greater wax-moth make short work of the combs.

The spring has been exceptionally cold and windy. Any colonies short of stores were out of luck, as there is little to be gathered at this time of the year in the hill section. The coast apiaries are building up rapidly and a few are storing some honey from the citrus (orange and grapefruit) groves. However, there will be but little honey to sell before the last of May.

Aibonito, P. R. P. G. Snyder.

In Utah— Bees generally have wintered well, but the conditions are spotted. Apiaries located on low ground, where the cold, damp atmosphere seemed to settle and remain during the winter, have suffered much more than those on higher ground. The colonies are stronger than usual since they flew but little during March, which kept them from wearing out, and they had but little brood up to April first. Since that time pollen has been abundant, the weather favorable, with little wind, and bees are breeding rapidly. Some new honey is coming in, but stores are disappearing rapidly. If there is a little unfavorable weather many colonies will have to be fed.

Moisture is unequally distributed over the state, and it is hard to say what the harvest will be. Alfalfa is abundant and never looked better at this season; but a late frost would affect the first bloom, which would be serious. Sweet clover will not be more than 50 per cent normal on account of last year's drouth.

The condition of the soil at present is good, but the amount of moisture that was evaporated last summer by the extreme drouth has not yet been replaced. April, so far, is short of rainfall, and the threatening clouds without moisture do not argue well; for the weather, like people, seems to get into fixed habits, let them be good or bad.

Inquiries regarding carloads of bees from California and some from Colorado are coming in. There is room for all if prior rights are observed, but we must be neighborly with those who are perhaps less fortunate than ourselves.

Hyrum, Utah. M. A. Gill.

* * *

In Michigan— On account of early mild weather spring sources of nectar and pollen are yielding before their usual time, with a resulting increase in brood-rearing over normal. One commercial beekeeper reported that he found many colonies during the last week in March with three combs of sealed brood, and a quart to a peck of bees standing out at the entrance of the packing case in the evening. Other beekeepers have reported heavier brood-rearing than ever observed before at this season. This condition may work to the advantage of the beekeeper, providing the remainder of the spring weather is favorable; but a cold month of April would surely mean a lot of feeding. Several reports of heavy consumption of stores have already been received.

The prospects for the honey flow from clover are bright, and with an estimate of 75,000 acres of sweet clover planted

in the state the honey flow from this source should be a sizable contribution to the state's crop.

The present high price of beeswax has loosened many sizable shipments to local jobbers. Is it possible that the heavy exportation of wax this year is due to an abnormal consumption of wax in foreign countries for Holy Year celebrations?

An interesting case regarding a beekeeper's right to keep bees in the city has just been settled in Highland Park, Michigan. Although requested by the Department of Health to remove the bees from the city, the beekeeper was able to prove that he had kept bees on his city lot five years without disturbance, and the order of removal was withdrawn.

There is a noticeable increase in the volume of the package bee business this spring. At the same time there is an increased interest in beekeeping generally, judging from inquiries received. The splendid results obtained by the office of apiary inspection, under the direction of B. F. Kindig, has undoubtedly contributed its part to the securing of renewed confidence among beekeepers of the state.

The Office of Apiary Inspection has plans for the Hutzelmanizing of foulbrood combs on an extensive scale, by means of district depots supervised by deputy inspectors. In this manner the sources of spread of the infection will be rapidly eliminated. R. H. Kelty.

East Lansing, Mich.

* * *

In Indiana—The prospects are very bright for a good honey crop in this locality at the present writing. Plum trees bloomed in the latter part of March and pears and peaches were in full bloom April 4. At the present writing, April 7, some apple blossoms are opening and if the warm weather continues apple trees will be in full bloom by April 14, which is about 10 days ahead of normal years. Bees are building up in fine shape and all honey plants are looking fine. However, there have been years that looked as promising as this, which turned out to be failures on account of freezes and drouth.

Properly packed bees wintered 100 per cent. Bees not packed varied greatly in the condition in which they came through. Some came through strong in bees and some were winter-killed.

As far as we can learn, not many colonies were in the path of the tornado. One man who had been writing about how to get a colony out of a tree wrote later that the tornado took tree, bees, and all, so that he could find no trace of the bee-tree. The storm passed about twenty miles from Vincennes, but there was no wind here to notice. When I see what it did to the towns it struck I can draw a mental picture of what it would do to an apiary. I can imagine the air fairly thick with nuclei, hive covers, bottom-boards, combs, packing cases, and maybe a few cats and dogs thrown in for good measure. I am glad I did not have the opportunity of seeing it.

Honey is selling only fairly well, as most of the mines are idle and miners are good honey customers. Jay Smith.

Vincennes, Ind.

* * *

In Alabama.—Until April 3 the weather was almost ideal for beekeeping. There had been a light honey flow and the bees built up rapidly till many of them were preparing to swarm. Most queen-breeders had some queens laying and hundreds of others coming on. On April 3 it started raining and turned cold and the bees have been able to work very little since. If this keeps on for a few more days there will be heavy losses, as the virgin queens can not get out to mate.

Today, April 6, gives some signs of clearing up. If we have ordinary weather from now on there should be no trouble in filling orders for package bees, as there has been for several years past.

Honey plants are in better condition now than they have been in several years. Bees were just beginning to work on white clover when the bad weather started, which is fully ten days earlier than usual.

The State Inspector tells us that since starting his rounds early in March he has found a few new infected apiaries, but that in every instance where foul brood was found last year the apiaries where it was destroyed show no signs of it this year. With such efficient work there is little chance of foul brood ever getting a real foothold in the state.

Montgomery, Ala. J. M. Cutts.

* * *

In Ontario—We have been favored with unusually mild weather here in Ontario ever since early in February, and for the past three weeks practically no rain or snow has fallen. As a result, spring conditions are much farther advanced than they were a year ago at this time, and farmers generally are in the fields at this date (April 9). We speak of April showers bringing May flowers, but this year we have had no showers in April and rain is needed. Surely this is an unusual condition for so early in the spring. Clovers have wintered very well, so far as I can learn from others who have sent me reports, and observation as to local conditions shows that to be the case in our locality.

We have given a superficial examina-

tion to all our bees, and I am glad to say that their condition is very good to date. Loss is practically nil, so far as colonies actually dead are concerned, but a number are sure to turn up queenless later on, and of course we expect—or, rather, let me say we are sure to find—that foul brood will take its usual toll. We generally know just how serious that source of loss will be when we do our general overhauling of colonies, clip queens, etc., during fruit bloom in May.

Some may wonder just what I mean by a "superficial examination" given on the first visit in early spring. Briefly I might say that it consists of doing as little as possible in the way of disturbing the colonies and at the same time doing enough to be sure that all have stores, that hives containing dead colonies are closed up so as to prevent being robbed out, and that very weak colonies, if any, are examined to be sure that they are absolutely free from foul brood. Yes, this latter precaution is always taken with very weak colonies, even if the weather is too cool for examining the brood-nests, as we would rather do injury to a few weak colonies than to have one robbed out later on that might happen to have foul brood. Some years ago we had a couple of experiences of that kind, and it is needless to make any explanation as to why we are always anxious to know the real condition of a very weak colony in April.

Just an illustration in passing to show just how accidents of that nature may possibly happen. At the last yard we examined on our first round, every colony but one was alive, all had stores, and all were strong with bees except this one colony. This colony had been queenless last fall when fixed up for winter, and of course we did not know this at that time. Others may possibly know that every colony packed in the fall is queenright, but that is not the case with us by any means, and we always find a few of this kind in the spring. The weather was quite warm when we arrived at the yard and I at once noticed that bees were starting to rob this colony that we found to be queenless, as there were very few bees alive in the hive. We at once closed up the hive and later found it very heavy with honey. So far as we could see, the combs were free from foul brood: but, supposing it had been even slightly diseased, what would have happened if we had not arrived that day, and the bees had carried out over forty pounds of this honey to their various hives?

When on inspection work I have known just such an accident to happen, and in some cases the bulk of the colonies in the apiary were ruined. It pays to make an early inspection of all apiaries if there is a sprinkling of foul brood among the bees. Keep that idea ever in your mind if you are located in a district where disease is apt to show up any time. In this early inspection we remove part of the packing if there is too much to allow us to turn up the back end of the quilt to have a peek into the hive. If there are stores across the hive, and sufficient bees in normal condition to assure us that the colony is all right, it is at once closed up and a mark placed on the back of the hive for reference when we examine again later on in the season. This operation may not take over a minute or two. If there is a bit of sealed honey at the back end of the outside combs, but none at all in the combs between, we mark the hive "light," which means attention is needed again in the near future. If no sealed honey is noted at all in the back end of the combs, we feel sure that stores are required at once and act accordingly.

If a colony is weak, the first thing I do, as a rule, is to place my nose down near the top of the frames to see if foul brood is present. I do not guarantee to be able always to detect disease in that manner if only a few cells are present, but if there is very much disease the test is 100 per cent sure. If sufficient bees are present to insure against being robbed out (in this connection I make sure that they have a queen) and no evidence of disease is shown by the olfactory test, the colony is left for the present. If a colony is very weak, we make sure no disease is present by actually having a look at the brood-nest even if the weather is too cold to work with the bees. All this work takes but very little time in the hands of an experienced beekeeper, and one soon learns just what to do and what not to do at this time. This spring, while examining an apiary of 130 colonies, every colony was looked into as described, and three or four that were short of stores were attended to. Altogether not more than three hours' time was taken up in doing this.

Personally I am inclined to think that positive injury rather than good is caused by too early manipulation of the brood-nest, and only in extraordinary cases such as cited do we break up the brood-nest before dandelion and fruit bloom.

This year the first pollen came in on April 3. Last year it was April 25. Whether the present conditions will continue without serious setbacks later on by severe weather is a question, but true to the beekeeper's optimism we hope for the best.

J. L. Byer.

Markham, Ont.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Best Colony Yields 12 Supers. I am sending you a picture of my apiary and myself. The best colony built 12 supers of comb honey, and the second best seven. I had 10 swarms from four colonies, five natural and five artificial. The production of honey was 580 pounds. O. L. Babb.

Eaton, Ind.

Twelve supers of comb honey stored by one colony in 1924 in O. L. Babb's apiary, Eaton, Indiana.

Sweet Clover Yields Every Year. On page 88 in the January, 1925, number of Gleanings in Bee Culture, I note an article by Virgil Weaver, of Moville, Iowa, in which he says sweet clover yields nectar in any one location for a few years only, then the honey flow stops, never to return. As this is absolutely contrary to conditions in South Dakota, I am more than surprised. It makes no difference whether the season is wet or dry, white sweet clover yields honey here profusely every year.

I have kept bees here now 24 years and have never had a poor season. There is not a farmer in this county who does not have from 40 to 100 acres of white sweet clover pasturage. I have talked with other bee-men and all are surprised at Mr. Weaver's article, and all agree with me that white sweet clover yields honey profusely every year, whether on old land or new, whether pastured or grown for seed, and the same fields sown to it 24 years ago are still yielding even better every year. I have never seen the stalks of white sweet clover turning black before they bloomed. One field of 40 acres last season began blossoming July 1 and yielded honey profusely until seed began ripening, then the drouth set in and the stalks turned black. Later there came heavy rains and to our surprise those same old stalks leaved out and blossomed again, giving the bees another three weeks of good honey flow which lasted until heavy frost.

Vermillion, S. D. Dr. E. A. Morgan.

Importance of Good Combs. I bought some bees last spring of a Texan. The seller in praising his goods, remarked as a proof of their value that they already had "worlds of drones." Upon examining them, I found there was hardly a comb in the yard that did not have a patch of drone comb in it. I found two frames, entirely drone comb, in the centers of two brood nests and completely filled with drone brood. I left them out to cool off. That beekeeper had made a failure. He had ten hives containing bees and one hundred old empty ones stacked up. Doubtless drones played their part in bringing about the failure.

Houston, Tex. E. P. Stiles.

Brood Power of Colonies. In regard to the suggestions of introducing first a two-pound package of bees, to be followed later by another pound, I believe if a three-pound package is introduced at first, then followed during the second week with another pound, enough of an increase in brood would be secured to pay for the trouble and the bees, since the amount of brood reared in a colony depends upon the brood power of that colony. This is the number of worker bees in a colony which are available at any given time to perform the duties of brood-rearing. The larger the package we begin with the higher will be our brood power. In the North, where the bees wear out slower in the early spring than they do here, a two-pound package would probably give good results, but for our locality I prefer to introduce a three-pound package first, and, if possible, follow this up in about two or three weeks with another pound package. In our brood-rearing studies we have found that the uniting of two colonies increases the "brood power," and consequently the amount of brood which will be reared by a colony.

Manhattan, Kans. J. H. Merrill.

WHO'S WHO IN APICULTURE

In order to supply a ready reference of state and provincial apiary inspectors, secretaries of state and provincial associations, as well as information concerning the net-weight laws, the regulations as to shipping bees on combs, and the teaching of beekeeping in the agricultural colleges in the various states and provinces of the United States and Canada, we have again corrected our "Who's Who in Apiculture" page as of April 1. It will be noted that some states require that the net weight be marked on packages of extracted honey, but do not require this on sections of comb honey, while others require that both be marked as to net weight. It should be remembered that any honey that crosses a state line on its way to market must be marked as to net weight, both comb and extracted.

State or Province.	Beekeeping Taught in Agr. College	Bees on Combs Prohibited.	Net wt. law		State or Province Inspector.	Secretary State Assn.
			Extr.	Comb.		
Alabama			Yes	Yes	T. Atchinson, Montgom'y.	
Arizona		Yes	Yes	Yes	P. H. Benson, Palo Verde.	G. M. Frizell, Tempe.
Arkansas			No	No		G. G. Baker, Little Rock.
B. C.		Yes			W. J. Sheppard.	W. J. Sheppard, Nelson.
California	Yes	Yes	Yes	Yes	County Inspection.	G. H. Vansell, Davis.
Colorado	Yes	No	Yes	Yes	R. G. Richmond, Ft. Col.	R. G. Richmd, Ft. Collins.
Conn.	Yes	No	Yes	Yes	W. E. Britton, N. Haven.	C. J. Rost, Meriden.
Delaware			No	No		
Florida	Yes	*	Yes	No	None at present.	Ceased to function.
Georgia					S. V. Brown, Baxley.	W. C. Barnard, Glen'ville.
Idaho	No	*	No	No		
Illinois	Yes	No	Yes	Yes	A. L. Kildow, Putnam, Ill.	J. R. Wooldridge, Chicago.
Indiana	Yes	No	Yes	Yes	F. N. Wallace, Indian'p's.	C. O. Yost, Indianapolis.
Iowa	Yes	Inside	Yes	Yes	F. B. Paddock, Ames.	F. B. Paddock, Ames.
Kansas	Yes	No	No	No	J. H. Merrill, Manhattan.	J. H. Merrill, Manhattan.
Kentucky	Yes		No	No	H. Garman, Lexington.	H. Garman, Lexington.
Louisiana						E. C. Davis, Baton Rouge.
Maine	No	No	Yes	Yes	G. A. Yeaton, Augusta.	F. L. Mason, Mechanic F.
Manitoba	Yes	Yes	No	No	L. T. Floyd, Winnipeg.	L. T. Floyd, Winnipeg.
Maryland	Yes		Yes	Yes	E. N. Cory, College Park.	E. N. Cory, College Park.
Mass.	Yes	*	Yes	Yes	B. N. Gates, Boston.	Mrs. T. L. Wiles, Hing'm.
Michigan	Yes	North	Yes	No	B. F. Kindig, E. Lansing.	R. H. Kelty, E. Lansing
Minnesota	Yes	No	Yes	No	C. D. Blaker, Minneap's.	C. C. Matthews, St. Paul.
Mississippi			No	No		
Missouri	Yes	No	No	No	G. J. Lynn, Chillicothe.	Clay T. Davis, Braymer.
Montana	Yes	Yes	Yes	No	O. A. Sippel, Bozeman.	O. A. Sippel, Bozeman.
Nebraska	No	No	Yes	Yes	None.	F. M. Parsons, Omaha.
Nevada	No	Yes	Yes	Yes	G. C. Schweis, Reno.	
New Bruns.		Yes			H. G. Miller, Freder'kt'n.	H. G. Miller, Fred'kt'wn.
New Hamp.	Yes	No	Yes	Yes	A. L. Felker, Concord.	J. R. Hepler, Durham.
New Jer.	No	*	Yes	Yes	E. G. Carr, Pennington.	E. G. Carr, Pennington.
New Mex.			No	No		
New York	Yes	Yes	Yes	No	G. G. Atwood, Albany.	L. E. Hall, Tribes Hill.
Nor. Car.	Yes	No	Yes	No	T. B. Mitchell, Raleigh.	J. E. Eckert, Raleigh.
Nor. Dak.	Yes	Yes	Yes	Yes	R. L. Webster, Fargo.	R. L. Webster, Fargo.
Nova Sco.		Yes			W. A. Brittain, Truro.	
Ohio	Yes	Yes	Yes	No	C. A. Reese, Columbus.	Florence Naile, Columbus.
Oklahoma	Yes	No	No	No	R L. Blackwell, Lex'gton.	C. F. Stiles, Stillwater.
Ontario	Yes	Yes	Yes	No	F. E. Millen, Guelph.	F. E. Millen, Guelph.
Oregon	Yes	No	Yes	Yes	County Inspection.	H. A. Scullen, Corvallis.
Pennsyl.	Yes	*	Yes	Yes	C. N. Greene, Harrisburg.	C. N. Greene, Harrisburg.
Pr. Ed. Isl.	No	No	No	No	H. Newson, Charlottet'wn.	H. Newson, Charl'tet'wn.
Quebec	Yes	Yes			C. Vaillancourt, Quebec.	J. A. Prud'homme, St. Ph.
Rh. Island	No	No	No	No	E. A. Stene, Kingston.	E. D. Anthony, Barr'gton.
So. Car.	Yes	*	No	No		
So. Dak.		*	Yes	No	L. A. Syverud, Yankton.	R. M. Gilcrest, Brookings.
Tenn.	Yes	*	Yes	No	J. M. Heatherly, Knoxv.	G. M. Bentley, Knoxville.
Texas	Yes	Yes	No	No	F. L. Thomas.	A. Hasslbauer, San Anto.
Utah	Yes	No	Yes	Yes	D. H. Hillman, Salt Lake.	F. B. Terriberry, Salt L.
Vermont	No	No	Yes	Yes	E. A. Jones, Montpelier.	J. A. Corey, N. Ferrisb'g.
Virginia			Yes	Yes		B. Anderson, Rustburg.
Wash.	No	*	Yes	Yes	B. A. Slocum, Pullman.	Helen Steiner, Auburn.
W. Va.					T. K. Massie, Athens.	W. C. Griffith, Elm Grove.
Wiscon.	Yes	No	Yes	No	S. B. Fracker, Madison.	H. F. Wilson, Madison.
Wyoming	Yes	Yes	Yes	Yes	C. L. Corkins, Laramie.	C. L. Corkins, Laramie.

* Permitted on inspector's certificate.

United States—Investigation and Demonstration in Beekeeping, Jas. I. Hambleton, Apiculturist, Bureau of Entomology, Washington D. C.

Dominion of Canada—Investigation and Demonstration in Bee Culture, C. B. Gooderham, Dominion Apiarist, Central Experimental Farm, Ottawa, Canada.

American Honey Producers' League—Prof. R. B. Richmond, Secretary, Fort Collins, Colo.

Beekeeping is also taught in schools or colleges other than the State Agricultural College, in California, Massachusetts, Michigan, Minnesota, Nebraska, New York, Ohio, Ontario, and Quebec.

BEES, MEN AND THINGS

(You may find it here)

"It may be of interest to you to know that I wintered 75 colonies of bees on their summer stands without a single loss."—Louis Rausch, St. Louis County, Mo.

"The prospects for a good crop of honey here this year are 100 per cent, I think, and the climate conditions are as favorable as a man could ask."—E. N. Colbert, La Salle County, Texas.

"As a suitable slogan for the honey industry to compare with the 'Say it with Flowers' of the florists, why not 'Eat Honey for Health'?"—R. H. Macdonald, Trumbull County, Ohio.

"Some of my outdoor-wintered colonies in ten-frame hives with a food-chamber on top are hanging out now (April 13), so I expect to try making some early increase."—Earl Keller, Lenawee County, Mich.

"Prospects for a honey crop here are excellent. Colonies in one and one-half story hives are overflowing with bees and the main honey plants are just beginning to bloom."—F. R. Jordan, New Hanover County, N. C.

"When I put foundation in the wired frames I slide the sheets between two wires. They can not come off even if they should get loose. Of course, this makes it necessary to imbed the wires from both sides."—Peter Wolfarth, DuPage County, Ill.

"My neighbors told me that beekeeping is a thing of the past in this locality, but I find that I can produce 100 pounds of fine high-quality honey per colony. I now have 25 colonies in modern hives on good combs and have most of them Italianized."—J. C. Kirtland, Polk County, Tenn.

"Beekeepers shipping honey to the Boston market will be especially interested in this selling argument and honey recipe disclosed by a Bay State man:

> He mixed his beans with honey;
> He did it all his life.
> 'Twas not because he liked the taste—
> It held them on his knife.

—A. M. Southwick, Middlesex County, Mass.

"I have looked over all of my bees and found only three dead out of 700 colonies. That speaks well for my winter protection during the coldest winter known in 20 years in this locality. Of course, I will find some queenless colonies at the next examination, but winter protection is not to blame for that."—Daniel Danielsen, Morgan County, Colo.

"In clipping a queen I always lift her from the combs by both wings, if possible, to keep her with her feet out in position for transferring to the left hand before clipping."—Morley Pettit, Ontario.

"To prevent splitting off the ears of Hoffman frames when removing in cool weather, I drive a nail through the end-bars horizontally when assembling the frame."—J. H. Fisbeck, St. Louis County, Mo.

"Bees are coming on fine in this locality. I had two swarms on April 12. I shall place second stories on most colonies at once. Where winter protection was given, most colonies will be ready for the honey flow."—J. H. Wagner, Merrick Co., Neb.

"Our alfalfa was badly winter-killed last winter. The county agent estimated that it is about one-third killed. Many fields of alfalfa have been plowed up to put in grain.—G. W. B. Saxon, Yakima County, Wash.

"I always have a large kettle of lime-sulphur spray on hand to spray trees with. I make a mixture of this and water, half-and-half, to sprinkle around the hives to keep the ants away. The bees pay no attention to the lime-sulphur spray. I sprinkle the ground three times a summer."—G. H. Thomsen, Sandusky County, Ohio.

"One of the greatest troubles that I think I have noticed in the honey industry is, that most beekeepers push honey only when they have some to sell. As soon as the crop is sold, they quit making any effort to keep honey before the public. Wisconsin really did not produce enough honey last year to keep it before the public throughout the winter."—H. F. Wilson, Dane County, Wisconsin.

"It is estimated that 90 per cent of the sections used in the United States are the 4¼x4¼x1⅞ inches. I presume the same holds true of Canada. If so, I plead guilty to being one of the minority and do not figure this a disadvantage. I use the 4 x 5 plain sections in a region where the 4¼ beeway sections are almost universally used. In seeking out wider markets the past season I had no difficulty in disposing of my crop since retailers who had previously handled nothing but 4¼-inch beeway sections were much impressed by the appearance of mine and quite willingly gave us a premium over current market prices."—G. F. Pearcey, B. C.

TALKS TO BEGINNERS

Geo. S. Demuth

Whether north or south, the management of the bees during this month depends largely upon weather conditions. If the weather is favorable, so that the bees can work much of the time, in portions of the South it will be necessary to watch the work of the bees carefully and give additional super room as needed. The supers are sometimes filled up with surprising rapidity, so that the beginner should look into them every few days to see what progress has been made. On the other hand, if the weather should turn cold and rainy, it will be necessary to watch closely to see that the bees do not run short of stores.

In some seasons the bees gather considerable nectar in the North during the month of May; but often the weather is such that they can not work much of the time, which means that the colonies will consume honey much more rapidly than they are able to gather it from the fields. If the weather is favorable during fruit bloom and dandelion bloom, the bees often gather much more than they need for their living and brood-rearing, so that considerable honey is stored in the hive; but as a rule there is a dearth of nectar after the fruit and dandelions have ceased yielding nectar before any is again available. Thus it often happens that the most critical time in regard to stores is during the latter part of May or just before the beginning of the honey flow from clover.

A good rule to go by in regard to stores is to make sure that each colony has at least 10 or 15 pounds of honey in the hive at all times during this month. If any colonies have less than this amount they should be fed according to the directions given last month in this department, giving at least 10 pounds of syrup to bring up their reserve of stores to the required amount.

When a Second Story is Needed

In the South, if a super (upper story) has not already been given to each colony, this should be done without delay. If the bees are working well, a second or third super may be necessary. These supers may be filled with empty combs to be filled with honey to be extracted; they may contain sections filled with foundation for comb honey; or they may contain frames filled with foundation for honey that is to be cut out and sold as chunk honey, depending on the kind of honey to be produced. But in the North, where the main honey flow usually does not begin until about the first of June, it is best to give a second story containing combs like those used in the brood-chamber, if available, in order to give plenty of room for early nectar and induce the maximum amount of brood-rearing during the month. This second story should be given before the bees become crowded. When a second story is needed during fruit bloom or soon after, it is well to have at least a part of the combs in the second story old dark brood-combs, since these are more acceptable to the bees early in the spring. If the second story contains a few frames of honey, so much the beter. If combs are not at hand for the second story, frames filled with full sheets of foundation may be used, but these should not be given until the bees begin gathering enough nectar to cause them to build out the combs. When they begin to whiten the upper portion of the brood-combs with new wax they will usually work well on the foundation. If foundation is used in the upper story, two or three frames of brood should be transferred to the upper story in order to induce the bees to begin working on the foundation promptly. These combs should be placed in the middle of the upper story.

If comb honey is to be produced the brood should be kept concentrated as much as possible. For this reason the second story should not be given unless needed, since the two-story hive must be reduced to one story when the comb-honey supers are given at the beginning of the main honey flow. However, many colonies will probably need a second story this season several weeks before the main honey flow, even in comb-honey production. The main purpose of this second story is to give such an abundance of room that swarming will be held back, thus enabling the colonies to build up to great strength before the time for putting on the supers.

The Swarming Problem

Unfortunately, as soon as the colonies become strong enough in the spring to store surplus honey profitably, some colonies begin preparations for swarming. About a week before a prime swarm issues, they start the building of queen-cells for the purpose of rearing a young queen to take the place of the old queen which goes out with the swarm. The beginner can watch the entire process of preparations for swarming if he cares to open the hive every few days and look for these queen-cells, which are usually built along the lower edge of the brood-combs. A swarm may be expected to is-

sue at about the time the queen-cells are sealed, unless the weather is unfavorable at that time, which would cause a delay until the weather is more favorable. The enthusiastic beginner need not hesitate to open the hive every few days, if he so desires, in order to see what the bees are doing. By doing so he will soon learn many things he should know in the care of the bees.

Prime Swarms and After-swarms

Since the bees build several queen-cells, apparently to be sure of rearing one queen to take the place of the old one, there will be several young queens ready to emerge about a week after the prime swarm issues. As a rule, the bees, instead of destroying all but one of the queens, as would seem the sensible thing to do, divide up their meager forces by swarming again on about the eighth day after the prime swarm issues, the after-swarm being accompanied by one of the young queens that has recently emerged. Some times three or four such after-swarms issue at intervals of a day or two until the colony is so depleted in numbers that it can not send out further after-swarms, after which all but one of the young queens are killed and further swarming ceases. Of course, the beekeeper can not permit the colonies to deplete themselves in this way, as they would if left without interference.

Swarming Undesirable

In the North, where the main honey flow begins in June and the bees often are not able to gather sufficient for a living during the month of May, swarming can usually be held in check by giving a second story as described above, especially if old, dark combs are used in the second story to induce the queen to begin laying in them promptly. Occasionally it is even necessary to give a third story to hold swarming in check during this period.

In the South, where the main honey flow may occur this month, swarms may issue in spite of the giving of abundant room. In such cases the colony should not be permitted to swarm more than once. After-swarms can usually be prevented by hiving the swarm in a new hive placed on the old stand, the old hive being moved to one side with its entrance turned away slightly from its former position. A day or two later the old hive should be moved close beside the new one, so that the entrances of the two hives are close together. On the seventh day after the prime swarm issues, the old hive should be carefully carried to a new location and placed on a new stand not close to another colony. If this is done carefully, so that the bees are not disturbed, and is done shortly after noon, when the bees are flying most freely, the old hive is so depleted of its bees that it can not send out an after-swarm, since all the young bees that have learned to fly during the week will return to the old stand and enter the new hive.

Clipping the Wings of the Queen

In anticipation of swarming, the beginner should find the queen in each of his colonies and clip off the major portion of the wings on one side, in order that the hiving of the swarm may be easier. To find the queen, take out the combs as described last month and examine both sides for the queen. She is easily recognized, being much longer than the workers and having a long slender body instead of the short stubby body of the drones, which are also larger than the workers. Two combs are left out of the hives, if the queen is not found on them, in order to make it easier to examine the remaining combs, which are taken out one by one and examined on both sides. As each comb is lifted from the hive it is well to glance at the next comb in the hive, for the queen is often seen there. If not, look on the opposite side of the comb just removed, and examine the others in the same way until the queen is found.

After finding the queen, stand the comb in a convenient position against the side of the hive, pick up the queen by grasping her wings between the thumb and forefinger of the right hand, then transfer her to the left hand, holding her by the feet. The right hand is then free to pick up a pair of small scissors and clip off a portion of her wings. She can then be placed back on the comb by taking hold of the remaining wing and setting her back on the comb.

When a swarm issues with a clipped queen, it is well to stand at one side of the hive and look for the queen when she comes forth and drops on the ground in front of the hive. When she is found a queen-cage should be set over her, so that she will run up into it. The plug is then put into the cage, when it is put in a shady place, so that the queen will not be injured by the direct rays of the sun. The hive should then be moved to one side and the new hive placed on the stand. If the bees are working in the supers, they can be transferred from the old hive to the new and the cover put on both hives. The cage containing the queen should then be thrust into the entrance, when everything is ready for the swarm to return. Sometimes a swarm having a clipped queen will return without clustering, and at other times it will cluster and remain on the tree for 10 or 15 minutes before returning.

(Continued on page 324.)

JUST NEWS
Editors

The Ohio State Beekeepers' Association has succeeded in having the legislature increase the appropriation for bee inspection in Ohio from $5000 to $10,000 annually.

* * *

Dr. E. F. Phillips has received double honors from the Apis Club, Port Hill House, Benson, Oxon, England, by being elected president of the Apis Club, and also by being presented with the Apis Club gold medal for this year.

* * *

A bill providing for the inspection of apiaries in New Hampshire has been passed by the legislature and signed by the governor. The bill puts the responsibility for the administration of the law in the hands of the Commissioner of Agriculture.

* * *

The Western Honey Bee announced in its March issue that it had been transferred to A. L. Boyden, of Los Angeles, Cal., but the April issue announces that a group of southern California beekeepers have now taken it over. Helen Weightman is the new editor.

* * *

The 63d meeting of the Wanderversammlung of the German-speaking beekeepers is to be held in Vienna, Austria, during the week of September 6, 1925, in connection with an exposition of beekeeping. Plans are being made to make this meeting international in scope.

* * *

The April issue of the Iowa Beekeepers' Bulletin published by the Extension Service of Iowa State College states that the average production for each demonstration apiary in Iowa last year was 154 pounds per colony, while the average for the state was 79 pounds per colony.

* * *

Prof. J. H. Merrill has resigned as a member of the faculty of the Kansas State Agricultural College, where he was engaged in teaching beekeeping and conducting research work in beekeeping. Prof. Merrill will engage in commercial beekeeping and fruit growing at Raynham, Mass.

* * *

The world's sugar supply is estimated to be about 10 per cent more than that of 1923 and 1924. This increase has been brought about by the recovery of the beet-sugar industry in Europe almost to the pre-war level, while the production of cane sugar last season was 53 per cent above the pre-war level. This increase in cane-sugar production is largely in Brazil, Cuba, Formosa, Java, and the Philippines. The total production, which was 12 per cent below the pre-war level in the season of 1919 and 1920, appears to be about 25 per cent larger in 1924 and 1925 than the average for the five pre-war years.

* * *

There will be a joint summer field meeting of the Colorado Honey Producers' Association and the Colorado State Beekeepers' Association at Loveland, Colorado, on Saturday, June 6. An interesting program is in preparation, with discussions and demonstrations on live topics, and a basket picnic.

* * *

B. F. Kindig, president of the American Honey Producers' League, has announced the appointment of Clifford F. Muth, of Cincinnati, as chairman of the local arrangements committee in charge of the league convention to be held in the Metropole Hotel in that city next January. Also the appointment of J. E. Eckert, State College Station, Raleigh, N. C., as chairman of the schedule committee for the eastern section of the country, including all states east of Ohio, Kentucky, Tennessee, and also the southern states of Florida, Georgia, Alabama, Mississippi, and Louisiana. C. L. Corkins, State Entomologist, Laramie, Wyoming, has accepted a like position for all of the western states, including North and South Dakota and Nebraska.

* * *

James I. Hambleton, Apiculturist, Bureau of Entomology, Washington, D. C., will conduct experiments on the flight activities of bees to determine the effect of various weather conditions and the distance from the source of nectar on flight activities. These experiments are to be conducted on the coast of Delaware in a region where there are no nectar-bearing plants. Feeders containing sugar solution of known density will be placed at distances from the hive varying from one-eighth of a mile to three miles. There will be ten colonies of bees, each colony on a scale, so that variations in the weight may be studied. Records will be made of the increase in weight during the day to learn the hour-to-hour variation in gathering. The feeders will gradually be moved to greater distances from the colonies to determine the limit of flight and the effect of distance on the production of honey, thus throwing some light on this important factor.

GLEANED BY ASKING

Geo. S. Demuth

Keeping Bees Away from Watering Trough

Question.—I have a six-gallon stone jar to give the bees water to keep them away from the water trough where the horses are watered. How should I fix the jar so that the bees will not drown? Will the water become stale if it is in the jar too long? L. H. Linedmuth.
Pennsylvania.

Answer.—A good way to prevent bees from drowning in the water-jar is to cover the surface of the water with cork chips, such as are used in shipping grapes. You should be able to obtain these at a grocery store. By adding a little salt to the water it will stay fresh much longer and the bees will take it more readily. If it becomes stale the jar should be emptied and fresh water put in.

Queen-excluders for Large Hives

Question.—Is it necessary to use queen-excluders on hives as large as the thirteen-frame Jumbo or the Modified Dadant?
New York. E. C. McCarthy.

Answer.—Much depends upon the character of the honey flow in your locality. If your main honey crop is gathered in June from clover you will no doubt need an excluder to keep the queen down, but if your main honey flow comes from buckwheat or other fall flowers the excluder is not necessary. Also in some portions of the West having a late slow honey flow excluders are not needed.

Paraffin to Keep Sections Clean

Question.—I would like some information about the use of paraffin on sections to prevent them from being stained. Frank Hill.
Kansas.

Answer.—After the sections are in the super and before the supers are placed on the hive, the tops of the sections can be painted with melted paraffin to prevent the bees from staining them with propolis. The paraffin should be kept just above the melting point, when it may be painted on the sections simply by dipping a brush into the melted paraffin and applying it to the tops of the sections as one would paint.

Food-chamber in Comb-honey Production

Question.—In running for comb honey, using a hive having a shallow extracting super on top for a food-chamber, where should the food-chamber be placed in relation to the super when the comb-honey super is put on?
Kansas. F. H. Patterson.

Answer.—In comb-honey production the food-chamber should be taken from the hive entirely during the honey flow. If it is nearly filled with honey and brood at the beginning of the main honey flow there is no objection to raising it up and placing the comb-honey super between it and the brood-chamber for a few days, but it should be taken away as soon as work has started in the comb-honey super. The food-chambers from several hives can be tiered up on the hive of a weak colony so that, as the brood emerges, they will be completely filled and the honey sealed ready to be given back to the colonies when the comb-honey supers are taken off. If you have only one colony this food-chamber can be used to form a nucleus by supplying it with a cover and bottom-board, then giving a ripe queen-cell, being sure, of course, that the queen is in the hive proper. At the end of the honey flow when the comb-honey supers are taken off the food-chamber is again put in place after killing the old queen, thus requeening the colony.

Bees Gnaw Down Combs

Question.—I have a strong colony that persists in gnawing its combs. Does this indicate that it has foul brood? J. N. Krout.
Ohio.

Answer.—No. Bees will gnaw down the cells of old brood combs almost to the midrib and build new walls when the cells become too small on account of the accumulation of cocoons. This is probably what the colony is doing in the case you mention. Another kind of gnawing of combs is that of cutting out a portion of the lower corners nearest the entrances, which the bees sometimes do during hot weather when no honey is coming in. Still another type of gnawing of combs is that which the bees do when they are robbing out honey from a weak colony or from a hive which contains no bees. When the robbers are numerous they tear down the comb in their frantic effort to reach the honey.

Number of Colonies Needed in Orchard

Question.—How many colonies should be used per acre or for a certain number of apple trees for pollination purposes?
New York. Gove Hambidge.

Answer.—Some authorities in the west advise that one colony per acre of orchard be provided, but this is rather indefinite, since an acre of young fruit trees presents a small number of blossoms as compared with an acre of older trees. In the East most authorities recommend at least two colonies per acre. When weather conditions are unfavorable, so that the bees are able to spend only a short period among the blossoms and consequently make short trips, it is doubtful if even two colonies per acre is sufficient. In the case of an old orchard with large trees more colonies should be provided.

Sugar Syrup for Spring Feeding

Question.—In making sugar syrup for feeding bees in the spring should I use equal parts of sugar and water by weight or by measure?
Ohio. H. H. Straszheim.

Answer.—It makes but little difference in the density of the sugar syrup whether

made of equal parts of sugar and water by weight or by measure. A given measure of granulated sugar weighs about the same as the same measure filled with water. Unless you have in mind stimulative feeding, it may be better to feed a heavier syrup than that made of equal parts of sugar and water. This will save the bees the trouble of evaporating the larger amount of water from the thinner syrup. Two parts of sugar to one part of water is suitable for spring feeding for the purpose of supplying a deficiency in stores when the feed is given in one large dose instead of given in small amounts for stimulating purposes.

Bees Troublesome in Dairy Barn

Question.—How can I prevent my bees from entering a dairy barn much to the annoyance of the cows? Elsworth Adams.

Answer.—Your bees are probably in need of pollen and therefore attracted to the dairy barn by the feed that is given to the cows. This trouble will no doubt cease as soon as natural pollen is available in abundance in your locality. You may be able to induce the bees to stay away from the dairy barn by keeping rye meal near the apiary. You can do this by placing the meal in a sheltered place such as an open shed or a store box set out in the open where the bees can get at it.

Effect of Large Entrance Upon Swarming

Question.—I have been told that swarming can be prevented by enlarging the entrance of the hive before swarming time. Have you any experience in that method? L. Henderson. Minnesota.

Answer.—Enlarging the entrances of the hive is a help in the prevention of swarming, but can not be depended upon to prevent it. Some beekeepers even raise the hive up on four blocks, thus making an opening about an inch high entirely around the hive at the bottom; but even this can not be depended upon to prevent swarming, although the tendency to swarm may be reduced if this is done in time.

Advantages of Full Sheets of Foundation

Question.—Please refer to page 171, March issue of Gleanings for 1924, estimating the cost of drawing out foundation. Have you any data on which to base an estimate of the cost of comb-building when using one-inch starters in either full-depth or shallow extracting-supers? We put up chunk honey very largely and it is a much-discussed question whether to use full sheets of foundation or starters only. North Carolina. A. W. Thompson.

Answer.—The cost of comb-building varies greatly with the character of the honey flow and other factors influencing the freedom with which the bees secrete wax, so it would be difficult to arrive at dependable conclusions in regard to this even from experimental data. Bees will build comb much quicker when full sheets of foundation are used than when starters only are used. It follows, therefore, that more honey will be stored during a rapid honey flow by using full sheets of foundation, thus enabling the comb-builders to keep ahead of the nectar-gatherers. During a slow honey flow, when the comb-builders can easily keep ahead of the nectar-gatherers it is possible that almost as many pounds of honey would be stored when using starters only. The greatest saving of time when full sheets are used comes about by the bees being able to work on the entire comb at one time, while in the case of starters the work is confined to the lower edges of the comb. Of course, there is also a considerable saving in wax. As a rule, it pays well to use full sheets of foundation for chunk honey just as it does for comb honey in sections.

When Queens Lay in Comb-honey Supers

Question.—If I place a shallow extracting comb in place of each outside row of sections in comb-honey supers to induce the bees to start work in the supers, will the queen go up and lay in these combs, making it necessary to use queen-excluders? G. F. Rehman. Ohio.

Answer.—If the combs are white, having never had brood reared in them, and have cells of the worker size, the queen is not liable to lay in them.

Swarms Carry American Foul Brood

Question.—I can capture several swarms during the swarming season by putting out hives containing empty combs. Is foul brood carried by the bees when swarming? Iowa. Fred Briggs.

Answer.—American foul brood can be carried by the bees when swarming and is often so carried when the swarm is hived on empty combs. If the swarm is hived on frames of foundation there is less danger of the disease being carried because the honey they take with them is used up in drawing out the foundation and building combs before any larvae are ready to feed. However, it would be better to take the slight risk of disease and later treat any colony in which disease develops than to let the swarm go to a tree, thus establishing a source of infection in your neighborhood.

Utilizing Combs of Honey from Dead Colonies

Question.—Will the honey left in the hive from colonies that have died during the winter do to give to other colonies by placing the hive body containing it on top of the brood-chamber of the other colony? If so, when should this be done, and should a queen-excluder be used between? H. F. Finabrock. Pennsylvania.

Answer.—Yes, this is a good way to utilize such honey provided you are sure that there is no American foul brood in these combs. This second story containing honey should be given to the other colonies as soon as they have their brood-chambers fairly well filled with brood and honey. In your locality this will probably be some time early in May. A queen-excluder should not be placed between the two hive bodies, since it will be better to permit the queen to have free range of both stories until about the beginning of the main honey flow.

A. I. Root's Story of His Own Life

And ye shall know the truth and the truth shall make you free.—St. John 8:32.

So much of my experimenting, or perhaps to call things by their right name, tinkering with bees in cold weather resulted in nothing but loss that perhaps I might be excused for strongly insisting that the colonies be carefully attended to when it is warm and then let alone during cold spells. Strong colonies take care of themselves in almost all emergencies. I tried hotbeds, glass houses, stoves, and a host of appliances to enable me to nurse up weak colonies in the spring—colonies that should have been united in the fall, five into one instead of being scattered in five hives. I wondered if we would ever recover from that folly of follies of calling a quart of bees a colony of bees fit to winter. I am conscious that it hung about my own apiary until I began to feel it the disease of all diseases that was difficult to eradicate.

How Much Cold Will Bees Stand?

During cold weather, when the temperature does not go lower than somewhere between 30° and 40°, single bees will live from 24 to 48 hours in a dormant state, to all appearance dead. If they are not warmed up and fed at the expiration of this time, or if they should remain out in freezing weather they then pass all human power of resuscitation. When bees are massed together in a cluster they keep up an animal heat that keeps the whole cluster above freezing. This is apparently kept up some hours even after the bees have exhausted all their food, and when they are, to all appearances, dead. They will even stand a temperature of zero in this condition, and many of them revive; but if they are left too long, say three or four days, they can not be revived. I made many experiments to test this matter and reported them in the January number of Gleanings for 1876.

Controlled Mating of Queens

Although greatly interested in the progress of the experiments in artificial fertilization of queens, I could see that the experimenters were making little or no progress. I enjoyed my 4th of July in 1871 by making a cheese-cloth box seven feet high and six feet in diameter. I put in a lot of drones and two queens seven or eight days old. As the queens circled around and the drones circled after them I had strong hopes and kept them there for several days, but alas, they circled in vain.

A friend made a house of cloth twelve feet long but with no better success. We both feared going to the expense of wire-cloth but determined to do so should further success be reported. Why couldn't we have succeeded just once to get a little faith? It is true, as we have many times said, that so far as the production of honey is concerned, the accepted way of letting the queens meet the drones in the air was good enough, provided we had an undoubtedly pure queen to rear cells from. But as every beekeeper wants at least one queen of absolute purity, who was to supply them?

Early Experiments with Baby Nuclei

In 1873 I saw some hives of Italian bees containing but one frame each, and that frame was only 2¼ by 3 inches in dimensions; yet notwithstanding this small size, each had a queen and the bees gathered pollen with as much bustle and importance as some greater colony. As one of these queens would fill their comb with eggs in fifteen or twenty minutes, the combs could be watched closely to find when the queens became fertile. My friend who showed me these hives said they were some of his father's experiments. I felt that if these wee hives could only be managed so that the bees would not swarm out, they would be fine for rearing queens.

Moving Bees Short Distances

Bees are reported to go back to their original location even after having been removed as far as two miles. I know of no way of moving a colony of working bees during the working season a hundred yards without loss. I made careful experiments in the matter. I smoked, drummed, and clustered them with their queen apart from their combs, yet go home they would, a great part of them, in spite of all I could do. To be sure, thoughtless people claim there is no loss, but if they put a similar hive on the original spot they can easily determine how many are lost. If no such hive is used, the bees scatter about in a way that is likely to be unnoticed. Careful inspection of the shrubbery at night or early in the morning generally reveals the homeless wanderers. Moving the hive

a foot a day is the safest plan I know, but it is a great bother and after all a considerable damage to the work of the bees.

Of course, by confining the bees to the hive or by waiting a week or more until after a spell of bad weather, I could move them without much loss; but careful observation showed that even then the older bees, many of them, were missing. I once purchased a colony of bees from a neighbor in January. There was no weather when they could fly until March, but even then so many bees went back that the rest froze outright the first cold night. An examination showed a great part of them scattered about on the ground around their former location.

Why Bees Shake Their Bodies

In regard to why the bees run rapidly over the combs, frequently turning around and shaking their bodies violently, it is my opinion that this is only an expression of rejoicing caused by a sudden yield of honey, an accession to their stores by robbing, by feeding, by fine weather after a storm, by a lot of young bees just emerged, etc. I have seen a whole colony wildly rejoicing just because I gave a few clean empty combs when they had the rest all full. I had no faith that the wax producers have anything to do with it, although I had seen such statements. When a young bee makes its first foraging trip and returns with a load of pollen it seems anxious that all shall notice its great achievement, goes in the hive and out several times, shakes its body, runs against its fellows as though they were of no account, and often seems to induce its fellow juveniles to go forth in hot haste to see if they can not do as well. Bees are as jolly, playful and happy as kittens when once they are known.

Experiments in Swarming

Natural swarming for the first time rather got the better of me in 1870. Removing all queen-cells and all honey, and giving empty combs in the center of the hive, did no good. One colony even swarmed while I had the hive open removing the honey. I thought I would try natural swarming a little, since it had been claimed that such swarms work so much better. However, after some experience of this kind I resolved that if I didn't take the matter in hand and have swarming when I wished it and how I wished it, it would be because I couldn't.

Here is my complaint: My first natural (born fool, I should like to say) swarm, I put in a "diamond" hive. It stayed half a day without working a speck and then came out again. As I had no combs of brood the size of that hive I thought I would try hiving them again. But, as soon as the queen was uncaged they were off again. Of course I always kept my queen's wings clipped, but this time the swarm went off and joined itself with a small swarm of black bees belonging to a neighbor. I hived all the bees, but when explaining the matter to my neighbor he said his bees were yellow, too! So away went half a bushel of my best Italians.

Another swarm acted the same way and I paid $5.00 for a small third swarm of black bees so that I might carry my own Italians home. Still another swarm came out four times, and I could keep them only by caging the queen nearly a week.

The Shaken Swarm Plan in 1870

After all this I became disgusted with the state of things and decided to carry out a plan of my own. I shook off all the bees, including the queen, into an empty Langstroth hive on the old stand, and gave the bees one comb of brood, as in case of all of the natural swarms. The shaken bees went to work and built more comb in two days than my natural swarms did in a week. The parent hive had a new location, of course, and young bees enough to care for the brood. All were shaded from the hot sun.

In any kind of swarming I always furnished queen-cells or brood from choice stock, selected with a view to give gentle bees and good honey gatherers.

The Need of Warm Supers

In the house apiary in 1876 I had, for the benefit of visitors, a full set of fancy glass boxes, with the bees working on the white foundation. To avoid disturbing the bees with too much light when no one was watching them, I threw over the boxes a cloth curtain. On one of the hives I used by accident a thick woolen cloth, and several times when this was carelessly omitted the bees seemed to cease work in the boxes. Further experiments showed this to be the case, for even if the house were as dark as pitch when the spread was left off, the bees would very soon almost desert the outside boxes. This shows that it is very important for comb-honey supers to be well protected from the changes of the weather. This experiment was made during quite warm weather, and the hive was inside the house apiary.

A Self- Hiving Apparatus

A beekeeper in Pennsylvania sent me in 1877 an apparatus for hiving a swarm. The plan was to have a colony on a platform so nicely balanced that, when a swarm left, the hive changed its position enough to close the entrance. The bees were supposed to have been taught previously to go out and in through an empty hive, and when they returned as soon

(Continued on page 345.)

Classified Advertisements

Notices will be inserted in the classified columns for 7c per word. You must say you want your advertisement in the classified columns, or we will not be responsible for errors. For special conditions on bee and queen advertising please write us. Copy should be received by 15th of preceding month to insure insertion. Cash with copy if credit has not been established previously.

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(Temporary advertisers and advertisers of small lots, when discontinued are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued when they are in good standing.)

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HONEY AND WAX FOR SALE

NEW CROP clover honey in new 60-lb. tin cans. D. R. Townsend, Northstar, Mich.

FOR SALE—Comb honey at reduced prices. State your wants. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Choice white clover honey. Sample 15c. C. H. Hodgkin, Rochester, Ohio.

CLOVER HONEY—12 5-lb. pails, $10.00; 6 12-lb. cans, $12.00. F. L. Barber, Lowville, N. Y.

HONEY for sale, any kind, any quantity. The John G. Paton Co., 217 Broadway, New York City.

FOR SALE—Pure extracted honey, dark, in 60-lb. cans, at 8c per pound. Gilbert J. Sergeant, Sodus, N. Y.

FOR SALE—Comb and extracted white clover honey. Prices on request. Dr. E. Kohn & Son, Grover Hill, Ohio.

FOR SALE—Extracted, comb and chunk honey. Prices on request. Sample 15c. F. W. Summerfield, Waterville, Ohio.

HONEY for sale in 60-lb. tins, clover crystallized, at 13c per lb.; clover liquid at 14c per lb. Hoffman & Hauck, Inc., Ozone Park, N. Y.

FOR SALE—White honey in 60-lb. cans, also West Indian in 50-gallon barrels. Samples and prices on request. A. I. Root Co., 16-18 Jay St., New York City.

CHOICE SWEET CLOVER HONEY for sale at very attractive prices. State quantity desired and we will quote you f. o. b. Council Bluffs or Kansas City. A. I. Root Company of Iowa, Council Bluffs, Iowa.

BLENDED raspberry and milkweed, two of the best honeys produced in northern Michigan. Left with the bees until thoroughly ripened. Unexcelled for table use. Price in 60-lb. cans, 15c per lb. In 10-lb. pails, postpaid, $2.50. Sample by mail, 20c, which may be applied on purchase of honey. Elmer Hutchinson & Son, Lake City, Mich.

HONEY AND WAX WANTED

WANTED—A car or less quantity of clover honey in 60-lb. cans. Mail sample and quote lowest cash price for same. A. W. Smith, Birmingham, Mich.

WANTED—Clover and raspberry honey, comb and combless. Give description, quantity and best price delivered here. E. W. Peirce Co., 28 W. Main St., Zanesville, Ohio.

BEESWAX WANTED—Until further notice we will give 33 cents cash for pure average domestic beeswax, or 35 cents in exchange for bee supplies. Ship direct to us. The A. I. Root Company, Medina, Ohio.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

OLD COMBS WANTED—Our steam wax presses will get every ounce of beeswax out of old combs, cappings or slumgum. Send for our terms and our 1925 catalog. We will buy your share of the wax for cash or pay you a little more in exchange for foundation or supplies. Dadant & Sons, Hamilton, Ill.

FOR SALE

FOR SALE—Standard hives, $2.00. L. F. Howden, Fillmore, N. Y.

SOUTHWESTERN distributor for Robinson's comb foundation. Holloway Bros., Marietta, Okla.

FOR SALE—Root 10-inch foundation mill as good as new, $15.00. J. W. Utter, Pine Island, Orange Co., N. Y.

MAKE queen introduction SURE, ONE SAFIN cage by mail, 25c; five for $1.00. Allen Latham, Norwichtown, Conn.

GOOD second-hand 60-lb. honey cans, two to case, at 45c per case. C. F. Schobert & Co., 112 West 4th St., Kansas City, Mo.

FOR SALE CHEAP—Good 60-lb. honey cans, two to case, used once. S. T. Fish & Company, 163 W. South Water St., Chicago, Illinois.

QUANTITY of supers for 4 x 5 sections, complete, except sections, for ten-frame hives. Like new. $1.00 each. Merton Church, Highland Park, Ill.

FOR SALE—500 lbs. standard size medium brood foundation, in 5-lb. boxes, 50c per lb.; 60 lbs. or more, 45c. Securely packed. Ray C. Wilcox, Odessa, N. Y.

FOR SALE—Root "QUALITY" bee supplies. Buy Root goods and get the best by test. A catalog for the asking. A. M. Moore, 22½ S. 3d St., Zanesville, Ohio.

ROBINSON'S comb foundation will please the bees, and the price will please the beekeeper. Wax worked at lowest prices. E. S. Robinson, Mayville, N. Y.

FOR SALE—20 Lewis double-walled hives with outside rims and new frames. A-1 condition, no disease, $2.00 each in lots of five. Ross B. Scott, LaGrange, Ind.

USED 4¼x1⅞ beeway section-holders, no disease, good as new, $1.25 per 100. Beeway separators, 70c per 100. Super springs, 3 for 1c. G. A. Pauli, 901 West 11th St., Pueblo, Colo.

FOR SALE—1 Root two-frame reversible extractor, 1 Root uncapping can and wax press, 1 Sun wax extractor, and numerous other supplies. H. Shaffer, 2860 Harrison Ave., Cincinnati, Ohio.

FOR SALE—Finest quality clover honey, put up in 60-lb. cans, also 5-lb. pails. Write for prices. W. M. Peacock, Mapleton, Iowa.

ROOT-GERMAN wax press, complete; Peterson melter, complete; exhibition glass hives, violin. Elias Fox, Union Center, Wis.

FOR SALE—Second-hand 5-gallon cans. Only good cans offered. Two cans each case. Per 10 cases, $6.50; per 25 cases, $15.00. Ask for prices on quantity lot. A. I. Root Co., 230 W. Huron St., Chicago, Ill.

FOR SALE—46 double-walled Buckeye hives; 140 extracting supers; 10 Alley queen-and-drone traps; one steam uncapping knife. All in good condition. Write for particulars. Fred Briggs, New Sharon, Iowa.

FOR SALE—We accumulate from time to time beehive and beekeeping material, slightly shopworn or not regular pack, which we can sell you at attractive prices. Write for list. Dadant & Sons, Hamilton, Ill.

FOR SALE—Good second-hand 60-lb. cans, two cans to a case, boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases. C. H. W. Weber & Co., Cincinnati, Ohio.

NEW 5-gallon square cans made of No. 1 grade 107-lb. plate, double-seamed and soldered, with 1¾-inch cork-lined cap, per 100, $33.00; per M, $320. In carlots, $300 at Boulder, $250 factory. Foster Honey & Merc. Co., Boulder, Colo.

BEES AND QUEENS

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

SEE E. J. Beridon, Jr., ad page 322 before buying package bees.

HARDY Italian queens, $1.00 each. W. G. Lauver, Middletown, Pa.

PACKAGE BEES—Circular free. Van's Honey Farms, Hebron, Indiana.

ITALIAN QUEENS—1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. G. E. Whittle, Mussel, Alabama.

BARGAIN—20 colonies bees, guaranteed no disease. Root reversible extractor. Clark Bros., Munford, Ala.

15 8-frame colonies, $7.50 each. Root strain and Carniolans. Guaranteed no disease. S. Fannin, Eden, Alabama.

I WILL sell about 15 colonies of bees in good condition. Guaranteed free from disease. August Nigabower, Ilion, N. Y.

BOOKED TO CAPACITY on packages. WHY? Order a queen and find out. $1.00 each; 6 for $5.00. J. J. Scott, Crowville, La.

HOLLOPETER'S ITALIAN QUEENS. Ready June 1. Untested, 1, $1.25; 6, $7.00; 12, $13.00; 25, $24.00. J. B. Hollopeter, Rockton, Pa.

BRIGHT Italian queens, 1, $1.00; 12, $10.00; 100, $75.00. Write for prices on package bees. T. J. Talley, Greenville, R. F. D. No. 3, Ala.

FOR SALE—Bright Italian queens, $1.00; 6, $5.00; 1-lb. package bees with queen, $3.00; 2-lb. package with queen, $4.50. Powell Owen, Greenville, Ala.

ONE 2-lb. package bees with queen, $3.75; 3-lb., $4.50. Larger the order, better the price. Tested queen, 50c extra. Established in 1909. Have no disease. F. M. Morgan, Hamburg, La.

FOR SALE—Four colonies of bees and complete outfit, including extractor—a bargain. Bees guaranteed free from disease. Herbert E. Wilkinson, 1741 Seyburn Ave., Detroit, Mich.

WE are offering our high-grade untested Italian queens at $75.00 per 100 for May and cheaper for June delivery. An inquiry will bring our circular. R. V. Stearns, Brady, Tex.

OWING to the death of my husband, I want to sell my bees and all that goes with the business, about 80 colonies. Will furnish inspector's certificate. Anna B. Eddy, Gansevoort, N. Y.

CERTIFIED Italian bees, 150 full colonies of this fine strain of leather-colored stock will be sold as usual. 25 years under STATE supervision. Charles Stewart, Box 42, Johnstown, N. Y.

FOR SALE—About 45 colonies of bees, guaranteed free from disease. Also extracted honey equipment for more than 100 colonies, mostly new. R. G. Norberg, Meadowbrook Farm, Cambridge, Minn.

GOLDEN ITALIAN queens for sale, 1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. Package bees in season. 20 per cent to book your order for spring delivery. J. F. Rogers, Greenville, R. F. D. No. 3, Ala.

SHE-SUITS-ME queens. Three-banded. $2.00 each. After June 5, $1 each. Send for price list of queens, nuclei and package bees. Free with each initial order, one SAFIN cage. Allen Latham, Norwichtown, Conn.

AGAIN our northern-bred leather-colored Italian bees have wintered fine, and we guarantee that no disease exists in our yards. Queens after June 15, $1.25 each; $12.00 per doz. Charles Stewart, Johnstown, N. Y.

BEES AND QUEENS—Two-pound package of Italian bees with untested Italian queen, $2.75; three-pound package, $3.55. Read my large ad in this issue before placing your order. H. E. Graham, Box 666, Cameron, Texas.

PRICES of my Golden Italian queens this spring will be: untested, $1.05 each; 6 for $5.50; 12 or more, 80c each, with state health certificate. Safe arrival insured. Hazel V. Bonkemeyer, Randleman, R. F. D. No. 2, N. C.

BUY from shipper farthest north. Order now for spring. Three-frame nuclei, with tested queens, $4.50 each. Best stock, no disease. 20 years' experience with satisfied customers. S. G. Crocker, Jr., Roland Park, Baltimore, Md.

GOLDEN ITALIAN QUEENS, untested, $1; 6 for $5.40; 12 or more, 80c; tested, $1.50; select tested, $2.50. Apiary inspected by state inspector. No disease found. Safe arrival and satisfaction guaranteed. D. T. Gaster, R. F. D. No. 2, Randleman, N. C.

CRANDALL'S Italian bees and queens are "PRODUCTION-BRED" Try some of them in those big hives and prove it yourself. Our customers, both here and abroad, are sending us some fine reports about them. Ready June 1. Untested, one, $1.00; 12, $10.00; 100, $75.00. Packages and nuclei. Safe arrival and satisfaction guaranteed. Circular on request. Connecticut Valley Apiaries, Berlin, Conn.

THREE-BANDED Italian queens. Every queen guaranteed a good queen. Warranted purely mated. Tested in May and June, $2.00 each. After June, $1.50. Untested in June, 1, $1.25; 6 for $7.00; 12 for $13.00. After June, 1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. If a colony goes through winter queenless it will not pay to give them a queen. Better unite it with another. J. F. Diemer, Liberty, Mo.

WE want to quote you prices on your May and June queen requirements. A card will bring our circular and price list. R. V. Stearns, Brady, Texas.

FOR SALE—Some fine Golden Italian queens, untested, $1.00 each; tested, $2.00 each. Queens ready May 20. Satisfaction guaranteed. J. F. Michael, Winchester, R. F. D. No. 1, Ind.

LEATHER-COLORED three-band Italian bees and queens bring home the honey and make happy bee men. See our ad on page 323. J. M. Cutts & Son, R. F. D. No. 1, Montgomery, Ala.

TWO thousand packages with untested queens in 100 lots, 3-lb. size, $4.00 each; 2-lb. size, $3.00 each, while they last. Nuclei at same prices. Italians only. W. E. Buckner, Mt. Vernon, Ga.

C. W. PHELPS & SON are still producing the famous Phelps Golden Queens. PROLIFIC, GENTLE and very BEAUTIFUL. $2.00 each; 6 for $10.00; $18.00 a doz. C. W. Phelps & Son, Binghamton, N. Y.

GOLDENS ONLY—A limited number of late queens after April 15. $1.25 each; a few special breeders, $5.00 each; untested, $1.00. No bonding mark to it, but a money-back guarantee. S. H. Hailey, Pinson, Tenn.

FOR SALE—Bright leather-colored queens. Bees none better. Write for prices. Also will have some bees by the pound for sale in 1925. Get price and place orders early to insure getting when wanted. M. Bates, Greenville, R. F. No. 4, Ala.

IF you want good bright Italian queens by return mail send your order to us. Queens, $1.00 each; $10.00 per dozen; one pound of bees with queen, $3.00; two pounds bees with queen, $4.75. We pay charges. Graydon Bros., R. F. D. No. 4, Greenville, Ala.

WARRANTED pure-mated Italian Queens, $1.25 each. Will be ready to mail in my sure introducing cages by May 15. No black or hybrid bees around here, so my queens will be mated with pure Italian drones. Daniel Danielsen, Brush, Colo.

THREE-BAND Italian bees and queens, 2-lb. package with untested queen, $4.50; 1 untested queen, $1.00; $10.00 per doz.; 1 tested queen, $1.50. My motto is quality. No disease, safe arrival and satisfaction guaranteed. J. Allen, Catherine, Ala.

ITALIAN bees and queens ready April 1. Three-pound package or three-frame nuclei, with queen, $5.00; two-pound package or two-frame nuclei, with queen, $3.75. Book your orders early to avoid delay. Satisfaction guaranteed. Get my quantity prices before buying. W. E. Buckner, Mt. Vernon, Ga.

BRIGHT American Beauty Italian bees and queens, booking orders for special two pounds of bees on frame emerging brood and honey, queen introduced, $4.75. Untested queens, after March 15, $1.00. Certificate of health and guarantee safe arrival. Tupelo Apiaries, J. L. Morgan, Apalachicola, Fla.

QUALITY AND SERVICE—We have it when it comes to queens. Prices: Untested, $1.00 each; 25 or more, 85c each; 100, 70c each; tested, $2.25 each; 25 or more, $2.00 each; select tested, $2.65 each; 25 or more, $2.25 each. Satisfaction and safe arrival guaranteed. E. E. Salge & Bros., Weslaco, Texas.

MIDDLE TENNESSEE-BRED select three-banded and Golden Italian queens for 1925. One, $1.00; 6, $5.00; 12, $10.00. Write for price per 100. Apiaries under state inspection. Safe arrival and satisfaction guaranteed. Circular free. Middle Tennessee Apiaries, Columbia, Tenn.

LEATHER-COLORED Italian queens, $2.00 until June 1; after, $1.00; tested, $2.00. A. W. Yates, 15 Chapman St., Hartford, Conn.

FOR SALE—20 colonies of Italian bees in standard 10-frame Root hives, guaranteed free from disease. T. H. Wheatley, M. D., 248 85th St., Brooklyn, N. Y.

FOR SALE—40 colonies Italian bees, guaranteed free of disease, 10-frame Langstroth hives. Gage Bros., 1309 King St., E., Hamilton, Ont., Canada.

GOLDEN ITALIAN queens, producing large beautiful bees, solid yellow to tip. Package bees, nuclei circular, 1925 ready, free. Dr. White Bee Co., Sandia, Texas.

SCOTT QUEENS FOR 1925—Our high-grade queens will be ready about June 1. These queens are bred for heavy honey production. They get big crops for us and will for you. They are gentle, too. Three-banded only. One, $1.50; six, $8.00. Circulr free. The Scott Apiaries, La Grange, Ind.

FOR SALE—Golden Italian queens, untested, $1.00 each; 6 for $5.40; 12 or more, 80c each. Tested, $1.50 each; select tested, $2.50 each. Apiary inspected and no disease of any kind found. Safe arrival and satisfaction guaranteed. Sam Hinshaw, Randleman, N. Car.

PACKAGE bees and three-band Italian queens that please. Our 20 years' experience here in selective breeding of queens and the shipping of bees are at your service. No disease in this section. For prices and reference, write Allenville Apiaries, Allenville, Marengo Co., Ala.

FOR SALE—Three-band Italian queens that produce hardy and gentle bees, the kind that get the honey. Ready to mail May 20. Untested, $1.00 each; 6, $5.50; 12, $10.00. Tested queens, $2.00 each. Safe arrival and satisfaction guaranteed. Robt. B. Spicer, Wharton, N. J.

COMBLESS package bees shipped on sugar syrup with queen. Pure Italian stock. 2-lb. pkg., 1 to 10, $4.25; 3-lb. pkg., 1 to 10, $5.25. Write for prices on larger lots or nuclei. No disease and safe arrival guaranteed. Reference furnished. 20 per cent books orders. John A. Williams, Box 178, Oakdake, La.

PACKAGE BEES, NUCLEI AND QUEENS. Highest quality at rock bottom prices; 2-lb. package with young queen, $3.40; 10 or more, $3.30; 2-frame nuclei, same price. Queens, 80c, dozen or more, 75c each. Their quality has never been surpassed. Satisfaction guaranteed. State inspected. Crenshaw County Apiaries, Rutledge, Ala.

GOLDEN Italian queens and nuclei for 1925—the big, bright hustling kind (the kind that gets the honey). Satisfied customers everywhere. Untested, $1.00 each; 6, $5.00; 12, $10.00; $75.00 per 100; tested, $1.50 each. Two-frame nuclei, with queen, $4.50 each; 10 or more, $4.00 each. Safe arrival guaranteed. E. F. Day, Honoraville, Ala.

FOR SALE—Choice bright Italian queens. I have been building up this strain for the last 21 years for vigorous hustlers, good winterers, gentleness and fine color. These queens will equal the best on the market. Health certificates go with queens. Prices: 1 untested queen, $1.25; 12 untested queens, $12.00; 1 breeder, $5.00. Emil W. Gutekunst, Colden, N. Y.

CAROLINA QUEENS—It has taken me years to produce a strain of bees on which I can give an absolute guarantee of perfect satisfaction. They are gentle, prolific and excellent producers. Untested, $1.00 each; 12 for $10.00; $65.00 per 100; tested, $2.00 each; select tested, $2.25. A trial order will convince you. Carolina Bee Co., W. O. Curtis, Mgr., Graham, N. C.

OVERSIZE 2-pound packages (2½ pounds when caged) of young hustling, disease-free, Italian bees, with select untested queen, will insure you a rousing colony by the honey flow. These bees are bred right, caged right and delivered to you right, or I make them right. Order early to get shipment to suit your location. Ten per cent cash with order, balance before shipment. One package, $5.25; 12 or more, $5.00 each. Express prepaid. P. M. Williams, Ft. Deposit, Alabama.

THREE-BANDED Italian bees and queens. May delivery. One Root frame honey and brood, 1 good untested queen and 4 pounds bees, $5.50 each. Orders of 10 packages or more, deduct 40c. If additional frame brood and honey wanted, add 70c. Two-frame nucleus, with queen, $3.00; additional frame brood and honey, 70c. Safe delivery guaranteed and government health certificate with each shipment. Order from this advertisement. L. C. Mayeux, Hamburg, La.

ST. ROMAIN'S QUALITY BEES for sale. The pure three-banded Italian bees and queens at a very reasonable price. A two-pound package with queen, $3.00; three-pound package, $4.00; four-pound package, $6.00. Orders are booked with 25 per cent down and balance 20 days before shipment. Deliveries to be made between May 15 and July 1, 1925. Some shipments can be made earlier if weather permits. Bees are shipped on a comb of emerging brood and enough honey for feed in transit. Bees are absolutely free from disease. I furnish health certificate with each shipment. I also guarantee safe delivery and satisfaction. Address John St. Romain, Marksville, La.

WANTS AND EXCHANGES

WANTED—Small hand extractor. State size, condition and price. F. H. Lord, Belle Haven, Va.

EXCHANGE—2 honey tanks and wax press for package bees. Spencer J. Baird, Fultonville, N. Y.

FOR SALE—Cheap or will trade for bees and supplies, 4 Cyphers incubators, all in good condition. F. E. Schriver, Grafton, Ohio.

FOR SALE OR EXCHANGE—30 cases good used cans and cases, for one case 120-lb. choice clover honey. H. Lauzon, 641 Peterboro, Detroit, Mich.

COON, possum and skunk hound, female, well trained. Also young male, ready to train. Want bees in exchange. W. E. Crawford, Massillon, R. F. D. No. 1, Ohio.

SITUATIONS WANTED

12 YEARS' experienced beekeeper desires position. Patrick Houston, 321 Westminster Road, Brooklyn, N. Y.

SCHOOLTEACHER wants position with up-to-date beekeeper during summer months, apiary work or selling. Some experience in both. Earl Alexander, 532 South Scott St., Lima, Ohio.

INDUSTRIOUS young Hollander with experience in Dutch bee culture wants employment in commercial honey-production business, Michigan preferred. John Tiel, 822 Dunham St., S. E., Grand Rapids, Mich.

HELP WANTED

WANTED—Ambitious young man as apprentice to assist in handling 500 colonies. Give experience, if any, age, wages expected, in first letter. Earl L. Baker, Lake City, Mich.

NEAT, careful Protestant Christian young woman to assist my daughter and myself in apiary during season as learner. Reference desired. Albert Hann, Glen Gardner, N. J.

WANTED—Man of experience to operate about 250 colonies, on salary and commission, and help about the farm If married, wife can help in house. Pleasant surroundings and good home. Write or telephone Lloyd W. Smith, Madison, N. J., or 56 William St., New York City.

MISCELLANEOUS

OLD bee books wanted. Prof. Francis Jager, University Farm, St. Paul, Minn.

SLEEP ON FRESH PICKED BALSAM PILLOW filled with sweet breath of the Adirondacks; soothing and refreshing in the sick-room; excellent gift for sweetheart or friends; 3 lbs., $1.50; cretonne cover; postage paid; remit with order. Hannah Payne, No. 5, Raquette Lake, N. Y.

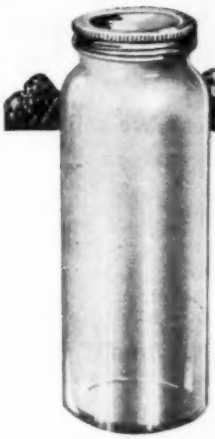
THE BEE WORLD—The leading bee journal in Britain and the only international bee-review in existence. It is read, re-read and treasured. Will it not appeal to you? Specimen copy free from the publishers. Send us a postcard today. It is well worth your little trouble. The Apis Club, Benson, Oxon, England.

Talks to Beginners. Continued from page 315

In the event that it is not possible to find and clip the queen before swarming time, a similar procedure can be carried out in hiving the swarm by the use of a queen-and-drone trap. The trap should not be placed over the entrance until it is expected that the colony will swarm within a few days. If queen-cells are found to be started in preparation of swarming, the trap may be put in place over the entrance and when the swarm issues the queen will be caught in the trap. While the swarm is out the old hive can be set to one side and the new one put in its place, after which the queen trap can be put on the new hive, and the slide drawn so that the queen can go back into the hive when the swarm returns.

In the event that a swarm issues without the queen being clipped or a trap being over the entrance, the queen of course goes with the swarm, unless, as sometimes happens, she is too heavy with eggs to fly and may be found on the ground in front of the hive. Swarms accompanied by a queen usually cluster without going far from the hive, and if on a small tree or bush it is often possible to cut off the limb carefully and carry the cluster to the new hive. A board or newspaper should be placed in front of the hive so that the swarm will go directly into the hive instead of under it, then the branch containing the swarm may be laid down at the entrance and some of the bees guided into the hive by means of a feather or brush.

It is sometimes necessary to shake the cluster of bees from the limb into a basket to carry them to the new hive.



Honey Sells Itself

—If Properly Displayed in Glass

Many More Standard Honey Jars Were Sold Last Month Than Ever Before.

Why? Because their Superiority is daily Becoming Better Realized by the Progressive Beekeepers

Insist upon Glass Jars

Let our Honey Jars be your Silent Salesmen

Order through our distributors or our main office at Wheeling, W. Va.

Distributors

THE A. I. ROOT COMPANY, Medina, Ohio.
HOFFMAN & HAUCK, 1331 Ocean Ave., Woodhaven, N. Y.
A. G. WOODMAN CO., Scribner Ave. and Blumrich St., Grand Rapids, Mich.

HAZEL-ATLAS

Honey Jars

IDEAL PROPORTIONS

Getting Ready for Spring?

Are You Interested in----

—**Buying your bee supplies? We sell Root's** goods only. Send for our catalog.

—**Three-ply foundation?** The best yet. Send for circular.

—**Hutzelman's Solution** for treating combs infected with American foul brood? Ask for circular with prices.

—**Selling your beeswax?** We want yours for cash or trade.

M. H. HUNT & SON

510 North Cedar St. LANSING, MICH.

The Alcohol-Formalin Solution

Has stood the severest tests throughout the past four years.

It has passed tests where water-formalin solutions and other water solutions have frequently failed.

Comparative tests in my own apiaries have shown that water disinfectants frequently give rise to recurrences of American foul brood.

Save your infected combs by disinfecting with

Hutzelman Solution

Patented Oct. 14, 1924.

For full information ask your dealer or write to

J. C. HUTZELMAN, M. D., GLENDALE, OHIO

RUSSELL'S SUPERIOR QUALITY QUEENS

As we have discovered the secret of mating queens to choice drones, we believe we are justified in saying "SUPERIOR QUALITY" QUEENS. 25 years' experimenting has brought us to the position where we can give you the very best obtainable in three-band bees. No order too large, none too small. Guarantee safe delivery. Free from disease. We never had a diseased colony in our yards.

2-frame nuclei from Roxbury, $5.00 each, as long as they last. Certificate with each package of nuclei, or queen.

QUEENS, $1.00 each in April; May, $1 each, 3 for $2.25; breeders, $10. We can supply either Carniolan, Golden or Italian.

The Russells' hives are crowded,
The Russells' hives are jammed.
The bees that fill the supers
Are from the F. M. Russell strain.

F. M. Russell Co., Roxbury, Ohio

Package Bees

QUALITY — SERVICE
None better at any price.
Illustrated circular free.

Van's Honey Farms, Hebron, Indiana

GOLDEN QUEENS AND THREE-BANDED BEES FOR 1925

Untested queens, $1.00 each. Tested, $1.50 each. 2-lb. package of bees, $3.00; 3-lb. package of bees, $4.50; nucleus, $1.50 per frame. Additional pound of bees with nucleus, $1.00. No disease; safe arrival guaranteed; bees inspected; never had disease.

J. W. SHERMAN, VALDOSTA, GEORGIA.

Mr. J. L. St. Romain, Apiarist,
White Clover Farm and Apiary, Hamburg, La.

Dear Sir: Two years ago I bought a nucleus from you and it was very satisfactory. I have not been able to find any advertisements of yours recently. Would you please quote prices. (*Signed*) *Culver D. Wilcox.*

MANY letters like the above have been received by Mr. J. L. St. Romain, our manager and queen-breeder. In 1924 he was in charge of apiaries of White Clover Farm & Apiary, and also of the apiaries of Cottonport Honey Girl Apiaries. When his house burned last September and records of both bee farms were lost, he reorganized them as one bee farm, which he now operates under the name of "Honey Girl Apiaries." with offices at Hamburg, La.

WHEN he produced that wonderful queen that the bee world has known as "St. Romain's Honey Girl" he was in charge of the apiary department of the White Clover Farm & Apiary. On account of the great demand for the descendants of this queen he was obliged to increase the stock under his management. He has so increased it that it is now twelve times what it was some five years ago.

THIS great increase is primarily due to the recommendation of satisfied customers. No better guarantee of quality and fair dealing can be given than the fact that the value of orders already received in advance of the opening of season (at the time this advertisement is written) is equal to the value of the sales for whole season of 1924. We are prepared for this increase in orders and can fill as many more.

PACKAGE BEES—3-lb. package, including an untested "Honey Girl" queen: one, $4.50; ten, $42.50; twenty-five, $102.50; one hundred, $405.00. Shipped combless or with stores on comb. 4-lb. package, including an untested "Honey Girl" queen: one, $5.40; ten, $52.00; twenty-five, $126.25; one hundred, $500.00. Shipped with comb. Wintered-over tested queens all sold.

"HONEY GIRL" QUEENS—By return mail or in rotation as orders are received. Untested: One, $1.25; ten, $11.50; fifty, $52.50; one hundred, $100.00. Select untested, add 10c per queen to price for untested. Select tested, pedigreed queen for breeding, $10.00. Scientifically selected, pedigreed breeding queen, $25.00.

Honey Girl Apiaries, Hamburg, Louisiana

Queens That Are Queens

ITALIANS

We have them and are now prepared to offer them to the beekeepers in quantity lots. We have been producing large crops of honey for 25 years and have reared thousands of queens and have stock that we believe is excelled by none. Try one or a dozen and you will want more. They get the honey. We want to show you.

1 select untested queen	$ 1.00
6 select untested queens	5.40
12 select untested queens	10.20
1 select tested queen	1.75
6 select tested quens	9.00

Queens shipped from Sumterville, Ala.

——Address——

DAVID RUNNING

Filion, Michigan, or Sumterville, Ala.

Grey & Yellow Bees

Try my stock for early breeding, comb building and honey gathering. There are none better for commercial honey producers. Prices as follows: 3-fr. nuclei with queen, $6.00. Tested queens, $2.00. Untested, $1.50.

DIXIE BEEKEEPER

A monthly publication devoted to the interest of beekeepers. $1.00 per year. Sample copy free.

WILDER'S CYPRESS HIVES

Are made for service and satisfaction. A full line of beekeepers' supplies. Write for prices.

J. J. WILDER

WAYCROSS, GEORGIA.

Queens---Rhode Island---Queens

Italian Northern-bred queens. Very gentle and hardy. Great workers. Untested, $1.00 each.

Queens delivered after June 1.

O. E. TULIP, ARLINGTON, RHODE ISLAND.
56 Lawrence Street.

QUEENS

Pure Three-banded Italians Bred for Business

Our output has been greatly increased. No order too large for consideration, none too small for prompt attention. We strive to excel in queen-rearing and service. No disease.

Pure Mating, Safe Arrival and Satisfaction Gauranteed

Prices to June 1: Untested, $1.00 each; $10.00 per dozen; $75.00 per hundred. Select untested, 20c each additional. Tested, $2.00. Breeders, good as any, $5.00.

Jensen's Apiaries

Crawford, Miss.

Hollopeter's Queens and Service

Italians, Untested, Ready June 1st

1, $1.25; 6, $7.00; 12, $13.00; 25, $24.00; 50, $45.00; 100, $80.00.

J. B. Hollopeter, Rockton, Pa.

Mack's Queens

Win the admiration of all those who use them. A trial order will convince you also. Select Untested only $1.00 each; $10.00 a dozen; $75.00 per hundred. Every queen guaranteed perfect and to give complete satisfaction. Booking orders now.

HERMAN McCONNELL

(The Bee and Honey Man)

ROBINSON, ILLINOIS.

SOUR HONEY DEPT.

I scarce know where to begin, theres so much more trouble than common with me. We've been havin some fine April weather here just right for catchin black suckers in Rocky creek and my wife has made me make garden every night I might have been fishin. That's been awful hard on me. She says I am like E. R. Root as to workin. She judges from a pile of maple log slabs Mrs. Root had hauled up into her back yard from the Root saw mill for E. R. to cut last November as a means of robustin up his health and giving herself some chunk wood for her open grate fire. She got Root's factory saw filer to sharpen up a family one-handle cross-cut saw, and I notice the saw with oil paper tied around its teeth is standin tied up out in E. R.'s garage just as it was at last Thanksgiving time and the pile of slabs out back the garage aint injured or mutilated a bit. Mrs. Root is a good woman and industrious too. She likes to see things move. But she aint seen no saw move back her garage this winter so I went to sympathizin with her the other day when she ups and says she didn't need no more sympathy than some other men's wives she knew. So I went along home.

And Mell Pritchard is still botherin

(Continued on page 331.)

Superior Italian Bees and Queens Delivered

Two-pound packages: 1-4, $4.75; 5-15, $4.60; 16-24, $4.40; 25-49, $4.25; 50 and up, $4.00.

Queens: 1, 75c; 12, $8.50; 100, $65.00.

Guarantee safe arrival, satisfaction or your money back.

W. C. Smith & Co.

CALHOUN, ALABAMA.

Norman Bros.' Three-Banded Italians

Queens and Bees by Return Mail

Mr. Beekeper, let us have your order for the season of 1925. No "ifs" nor "ands." We have the stock, equipment, and experience, and can give you prompt, satisfactory service. Mr. Beekeeper, when you introduce NORMAN BROS.' queens you can feel assured you have a beautiful queen that will do her duty, and as good as can be bought for the money. To know them, try them. You risk not one penny in ordering NORMAN BROS.' queens and bees. If you are not satisfied with them just return them and we will replace or refund your money. Isn't this a fair proposition to any one that purchases queens and bees?

MAY PRICES

Untested—1, $1.00; 6, $5.50; 12, $10.00; 100, $72.00. Select untested—1, $1.20; 6, $6.50; 12, $12.00; 100, $90.00. Tested queens—1, $2.00; 6, $11.00; 12, $21.00. Select Tested—$2.50 each. One 2-lb. package with select untested queen, $4.00 each; 12 or more, $3.80 each. One 3-lb. package with select untested queen, $5.50 each; 12 or more, $5.20 each. GUARANTEE—We guarantee pure mating, safe arrival, free from diseases, and satisfaction, in U. S. A. and Canada.

NORMAN BROS.' APIARIES, NAFTEL, ALA.

Carniolans and Caucasians

merit your trial this season. Get our prices before placing your order. We offer Carniolans from direct-imported Kofler and Ambrozic strains, as well as our own selected stock. **CAUCASIANS** bred from newly imported stock and the famous QUINN strain.

We are prepared to supply you with package bees for the season. Let us quote you prices. **ITALIANS.** We can supply you the best in three-banded stock. **Get our 1925 circular,** which gives full particulars of everything. It is free upon application.

W. A. HOLMBERG, Rt. 2, Turlock, Cal.

Root Service from Chicago

WHEN you get *Root Quality Bee Supplies* from the greatest shipping center in America, you get *satisfaction.* You get a superior grade of goods in *quality* and *workmanship.* Twenty-seven railroads mean quickest service for you. Write for our new 1925 catalog. Let us quote you on your wants.

A. I. ROOT COMPANY OF CHICAGO

224-230 WEST HURON STREET, CHICAGO, ILLINOIS.

To the Beekeepers of Vermont

Root quality Bee Supplies in stock. Prompt service with a short railroad haul saves time. Your patronage solicited.
F. D. MANCHESTER, Middlebury, Vermont.

The Apiarist's Friend.

GERMAN SCYTHES AND SICKLES, with "Dangel" cutting edge, permit cutting of grass in the apiary with minimum disturbance of the colonies. Catalog on request.
The Marugg Co., Dept. B, Tracy City, Tenn.

Better Way to Garden

Wonderful New Garden Machine!

You can now have the finest garden possible, without the slow, back-breaking work. Weeds **must** be kept out and the surface broken up to retain the moisture. This marvelous machine makes it easy and quick.

BARKER Weeder, Mulcher, and Cultivator

Simply push a BARKER along the rows (like a lawn mower). 8 blades revolving against underground knife destroy the weeds and **in same operation** chop up the clods and turn the surface crust into a level, porous mulch; also aerate soil. "Best Weed Killer Ever Used." Guards protect leaves. Has shovels for deeper cultivation. A boy can run it and do more and better work than 10 men with hoes. Used by thousands market gardeners, experiment stations, farm and town gardeners. Inexpensive.

FREE BOOK tells how to get best garden results; eliminate hard work. Illustrates and describes Barker; gives prices delivered, etc. A card brings it.

BARKER MFG. CO. David City Nebraska Box 15

Write for this **Free Book**

Carniolans

build up rapidly during the changing and unfavorable weather of the spring months if provided with plenty of food and well protected. This is absolutely necessary for the best results from the clover or other early honey flow. Besides, Carniolans are very gentle, very prolific at all times, build very white combs, are excellent workers, resist diseases as well as any other bees, and do not swarm excessively if intelligently managed. Ask for my free paper, "**Merits of the Carniolan Bee.**" It explains successful plans of managing this race.

I breed Carniolan queens of my own strain, 13 years' selection and breeding; JAN STRGAR and M. AMBROZIC imported strains. Breeders imported 1924. ITALIAN, C. B. Hamilton strain. The mother of this Italian breeder produced 577 finished sections of comb honey.

1 untested queen (either strain).....$ 1.50
12 untested queens (either strain).... 16.00
Tested queen (either strain), each..... 2.50

Delivery beginning last of May or early in June. Safe arrival by mail and satisfaction guaranteed.

ALBERT G. HANN
GLEN GARDNER, NEW JERSEY

NEW CATALOG READY
BEEKEEPERS' SUPPLIES

Root's Goods of High Quality. Three-ply foundation, standard stock of supplies kept on hand for prompt shipments. Send us your inquiries and orders early for quick action.

J. NEBEL & SON SUPPLY CO.
Montgomery County High Hill, Missouri

"THE FLOWER GROWER"
Unique among Monthlies

Luther Burbank Says:

"No other so thoroughly practical, well-edited and generally interesting."

THE FLOWER GROWER is all that the name implies **AND MORE.** It tells all about flowers and it tells many other things of interest to those who aspire to better living conditions and more beautiful surroundings. It teaches **balanced activities, a sane perspective and a better outlook on life.**

Departments for the Rose, Dahlia, Iris, Peony, Gladiolus and other flowers. Queries and Answers, Odds and Ends, Musings, Timely Suggestions, Our Birds, and many other helpful and interesting things. An editorial department and an **EDITORIAL POLICY,** which is strangely lacking in most magazines.

Up to sixty-eight 9 x 12-inch pages. Yearly subscription, $2.00.

Madison Cooper, Editor, 10 Court St., Calcium, N.Y.

TENNESSEE QUEENS OF QUALITY

3-band Italians only. Unt. Queens, $1.00 each; six for $5.00; $9.00 per doz. Pure mating and entire satisfaction guaranteed.

J. I. BANKS, DOWELLTOWN, TENN.

(Continued from page 329.)

and hectoring to become head editor of the Sour Honey dept. It gets to my ears as how he wants to promoot a skunk farm stock company as he means to head along with editin this dept. Skunks have a awful hold on Mell some way. But just afore he went to Ala. last fall he had another mishap in applyin his odorless method of handlin skunks so that his poor good wife agreed he should sleep in the barn about one week. My poor old cousin M. A. O., now diseased, called him a skungologist. He didn't mean to but he prevarricated so he did. Mell never see the day, and he knows it, when he could tackle a skunk and tell whether he'd sleep in the hay mow or between sheets from one night to another, so he didn't. He warn't no skunkologist ever. He was a false profit and that's all he was. And now as how he is down in Alabamy at Bay Minette fishin and hunting all winter and pretendin he went to raise queens, he better leave skunks alone. He never can get even now anyway. He is too far behind, and to be behind a skunk don't mean you better try to catch up. The further behind you get when you are behind the better.

Does the people of this country want

(Continued on page 335.)

HONEY PAILS

MANUFACTURERS OF
"BLOSSOM-SWEET"
AND
BADGER BRAND
5 and 10 lb. Honey Pails.

We specialize in 5 and 10 lb. round pails and 60 lb. square cans. Plain and Lithographed cans of all descriptions.

WILKES-BARRE CAN CO.
ESTABLISHED 1856
WILKES-BARRE, PENNA.

Patents Practice in Patent Office and Court.
Pat. Counsel of The A. I. Root Co.
CHAS. J. WILLIAMSON,
McLachlan Bldg., Washington, D.C.

No More European Foul Brood

Start Now and be Clean All Season

Now Easy to Keep It Out of Apiary

The simple, easy way to stop European foul brood is to feed B-H in sweet water or sugar syrup. This method gives sure results. Used and recommended by well known Entomologists, Bee Authorities, and Experiment Stations.
Costs little per hive per season.

GENERAL LABORATORIES, MADISON, WIS.

This Coupon Tells You How. Fill in and mail today.

General Laboratories, Dept. F, Madison, Wis.
Please send me free bulletin on B-H for foul brood.

Signed .....

Address .....

To New York State Beekeepers

HAVE YOU RECEIVED OUR 1925 CATALOG?

WE HAVE A GOOD STOCK OF ROOT QUALITY SUPPLIES AND AIRCO FOUNDATION.

HONEY CONTAINERS OF ALL KINDS.

HUTZELMAN'S SOLUTION FOR TREATING AMERICAN FOUL BROOD.

AND JUST A LITTLE BETTER SERVICE FROM

A. I. Root Co. of Syracuse

1631 WEST GENESEE ST.,
SYRACUSE, N. Y.

Serves You Best

World's Best Roofing at Factory Prices

"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofings, Sidings, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Save money—get better quality and lasting satisfaction.

Edwards "Reo" Metal Shingles

have great durability—many customers report 15 and 20 years' service. Guaranteed fire and lightning proof.

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Get our wonderfully low prices and free samples. We sell direct to you and save you all in-between dealer's profits. Ask for Book No 183

LOW PRICED GARAGES

Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book, showing styles.

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FREE Samples & Roofing Book

CHICKS ON LOW TERMS

Baby chicks shipped parcel post prepaid and guaranteed. 20 kinds to select from. Order early and get special prices. Big illustrated catalog and poultry guide free.
Colonial Poultry Farms, Box 831, Pleasant Hill, Mo.

Something New

Patent Pending

A remarkable tool for the handling of frames. No stings on finger tips. Send for circular. Price $2.00. Money refunded if you are not entirely satisfied after ten days trial in apiary.

HALL & SCOTT, Barre, Vermont.

You can have cash for your wax and old combs or cappings at the market price, or we allow a little more in exchange for supplies. Write for our terms and prices.

"Falcon"

Supplies--Queens--Foundation

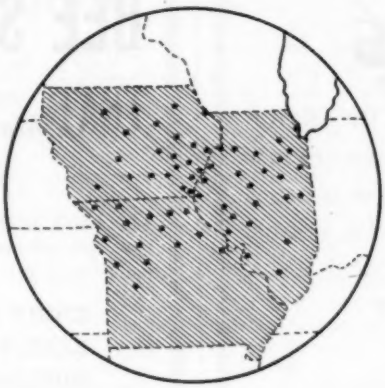
W. T. Falconer Mfg. Company

Falconer, New York (near Jamestown)

"Where the best beehives come from."

Ask for catalog. *Booklet, "Simplified Beekeeping for Beginners," free.*

Hives
Frames
Supers



Veils
Smokers
Tools

Right Here at Home, Folks

with any quantity of Lewis "Beeware" you may need

Our dealers cover Iowa, Missouri, and Illinois at places shown in above map. The nearest dealer's name is on your 1925 catalogue. Write for your copy, if you haven't one.

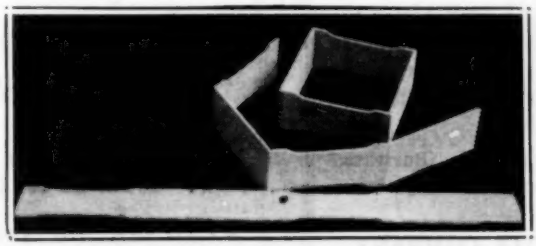
When the swarm is on the bush, wire, phone or write. You'll get **QUALITY** and **SERVICE.**

But—beat that swarm if possible. Order early. It will save you honey and worry—and will let us sleep nights.

Yours for a big year

Dadant & Sons, Hamilton, Illinois

DISTRIBUTORS OF LEWIS "BEEWARE"
FOR IOWA, MISSOURI, AND ILLINOIS



DADANT'S WIRED NON-SAG FOUNDATION

DADANT'S WIRED NON-SAG FOUNDATION

Lewis high-grade, velvet finished Sections

Root QUALITY BEE SUPPLIES

WE HAVE TRIED TO ANTICIPATE YOUR BEE-SUPPLY NEEDS AND HAVE ON HAND A CARLOAD OF ROOT'S GOODS. ORDER FROM US AND SAVE FREIGHT.

24-HOUR SERVICE.

THE SCHENECTADY BEE SUPPLY CO.

242 Union St., Schenectady, N. Y.
Telephone 313R.

BEE SUPPLIES THAT *Are Made to* SATISFY

The three points of Rusch Service that are keeping old customers satisfied and bringing new ones are:

RIGHT PRICES,
REAL SERVICE,
HIGHEST QUALITY.

A trial order will convince you. Write for our new 1925 catalog.

A. H. Rusch & Son Co.
Reedsville, Wisconsin.

Better Service for the Buyer of Bee Supplies

is one of the principal aims of our business. We believe, therefore, that our greatest usefulness lies in supplying WHAT you need, WHEN you need it.

We are manufacturers and distributors of just a little better bee supplies, just a little higher grade —SECTIONS, Bee Hives and Frames—in fact, everything the beekeeper needs.

Write for our free illustrated catalog and price list today.

AUGUST LOTZ COMPANY
BOYD, WISCONSIN.

Beekeepers' Supplies

Finest Quality
Right Prices
Prompt Service
Courteous Treatment

We solicit your patronage

Wm. Baldwin
24 N. Erie St., Toledo, Ohio

Authorized Distributor for
THE A. I. ROOT COMPANY.

Beridon Italian Bees for 1925

April and May Shipments

If it's bees you want, now is the time to order. April is here. Every package contains a frame of brood and honey, which insures safe delivery and makes the bees at home on arrival. A certificate of health accompanies each shipment.

2 lbs. bees with untested Italian queen, $3.50; 3 lbs bees with untested Italian queen, $4.25; 4 lbs. bees with untested Italian queen, $5.00. The above prices are on orders for one to ten packages. If you order ten or more packages, deduct 25c per package.

Nuclei, same price as package bees. Safe delivery and satisfaction guaranteed. Shipments begin the 10th of April. 25% with order, balance just before shipment.

E. J. Beridon, Jr.
Hamburg, La.

(Continued on page 331.)

for such a man as that to be editin the Sour Honey dept.? I say no. What does the people say? What does vocks populus say? They and it both says no. And what was his langwage when transferrin those bees with Huber Root, too?

My true friend, Rob. Mead, of White River Junction, Vt.. writes refreshin to Gleanings as follows:

"I like the sour honey department very much. This dollar for the subscription came from one of the two muskrats which took me the better part of two weeks trapping to catch when I should have been chopping wood and wiring up some frames for next spring. Trapping sure is a profitable business if you have got patience and good legs. Tell Old Drone there is plenty of good fishing up here and we always get a lot of bites though not all from fish unless you call them flying fish."

Such words of cheer and goodness as writ by Mr. Mead makes him a bright and shining star to me forevermore and forevermore. I am comin fishing with you, Mr. Mead.

Mr. Reim of Wisconsin and Mr. Kirkhuff of Pennsylvania, I will print all you have writ next time.

I will close as my wife is saying forcible to me as how our two remainin live

(Continued on page 336.)

Queens Free!

PURE YELLOW ITALIAN QUEENS

One Queen free with each order for twelve or more queens.

Merrill's Quality Queens have satisfied thousands of beekeepers for 15 years. They are of beautiful leather color, prolific, producing large uniform bees.

Bred from very best honey-gathering strain. Untested Queens, $1.00 each; 6, $5.00; $10.00 per doz.; 50 queens or more, 70c each.

Safe delivery and entire satisfaction guaranteed.

G. H. Merrill Apiaries, Piedmont, S. C.

Prompt May Delivery

If you need bees promptly, send us your order and we will not disappoint you.

2-lb. package with untested Italian queen, 1 to 10, $4.25 each; 10 to 50, $4.00 each; 50 to 100, $3.75 each; over 100, $3.50.

3-lb. package with untested Italian queen, 1 to 10, $5.25 each; 10 to 50, $5.00 each; 50 to 100, $4.75 each; over 100, $4.50

Above prices f. o. b. Macon, Miss. As good bees, queens, and service as the beekeeping world knows.

Geo. A. Hummer & Sons

PRAIRIE POINT, MISS.

Leininger's Strain of Italians

We have been queen-breeders for nearly 50 years. In all this time we have tested nearly every strain of Italian bees in the U. S. A. By this careful selection and breeding we have succeeded in producing a strain of bees surpassed by none but superior to many, bees that are gentle and great honey-gatherers.

Therefore if you buy queens from us you may be assured that back of them are nearly 50 years of careful breeding for the production of honey.

As we are located in a red-clover belt, it is but natural that our bees should have a long-tongue reach.

We will sell queens from this superior strain as follows: Untested, 1 to 5, $1.00 each; 6, $5.50; 12, $10.50; 100, $85.00. Tested, $1.50 each; select breeders, $5.00 to $10 each.

Safe arrival and satisfaction guaranteed.

Fred Leininger & Son, Delphos, Ohio

Q-U-E-E-N-S

With our twelve hundred Jumbo nuclei, I expect this season to be able to fill all orders promptly. The quality of our queens will be even better than ever before, as we have several breeders of exceptional merit, including "Queen Alice," our marvelous eight-year-old queen. Write for our Twenty-fifth Anniversary Catalog.

Prices before July 1.
1 to 4 inc..$2.00 ea.
5 to 9 inc.. 1.95 ea.
10 or more. 1.90 ea.

Prices after July 1.
1 to 4 inc..$1.50 ea.
5 to 9 inc.. 1.45 ea.
10 or more. 1.40 ea.

Breeders, service guaranteed for the season, $10.00 each.

Jay Smith

Route Three, Vincennes, Indiana

Our $200 Queen Is Dead

But we are breeding from the best of her daughters and granddaughters. Repeated high production records prove the value of our Red-clover strain. The tongues of bees from our breeders measure 4-100 of an inch longer than those of average bees.

Prices on bees and queens for immediate shipment are as follows: 1 2-lb. package with untested queen, $5.00; 12 for $56.70; 1 3-lb. package with untested queen, $6.00; 12 for $68.70. Untested queens, $1.25 each. Write for circular and complete price list. Also prices on quantities.

We guarantee safe delivery, freedom from disease, and perfect satisfaction or your money refunded. We have 800 colonies to draw from and use 1000 nuclei.

(Member Southern Bee and Queen Association.)

J. M. Cutts & Son

RT. 1. MONTGOMERY, ALA.

(Continued from page 335.)

swarms of bees need some feed right away now. She can say "now" as how it means not one second later than instanter. So I am closing the dept.

$1.00 REWARD!

For anybody who will tell us who the above feller is and his whereabouts at present, dead or alive. The Airline Honey Dept. of Root's sends this offer of reward to the Sour Honey Dept. of Gleanins for they say this feller now at large tomahawks Root's honey prices and amberscades Airline from time to time as how he hadnt orter ever. So they want to know who he is and where he is so they can incarcerrate him or muletify him and push up honey prices for theirselves at retale and not be hamstrung from behind by a ambusher. But this feller looks so good and so much like a whole Sunday-school alone hisself that I dont figger he can be so turrible as Airline Dept. thinks. But what I think don't make no difference hereabouts. So the reward goes—$1.00 for this feller alive or nearly dead and information leadin to where he is. Airline Dept. adds not to shoot him if he can be taken alive just as well, but they don't care much either way. First information addressed to Sour Honey Dept. of Gleanins gets $1.00. OLD DRONE.

Mott's Northern-bred Italian Queens

Select untested, till June 1: $1.25; $1.00 each thereafter. Select, guaranteed pure-mated, $1.25 each. Select tested, $2.00. Virgins, 50c. No disease. Satisfaction and safe arrival guaranteed. Canada borders Michigan on the east and north. Save long trips. All selected stock.

E. E. Mott, Glenwood, Mich.

Root Smokers

Why They Are the Best

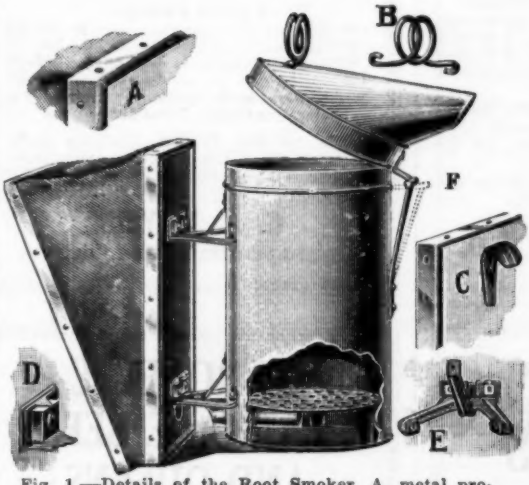
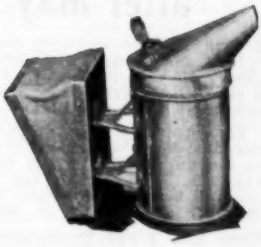
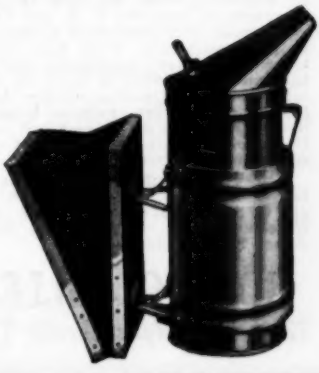


Fig. 1.—Details of the Root Smoker. A, metal projection to aid the fingers in holding the bellows. B, coiled wire handle that never gets out. C, hook on back of the bellows, or on hinge, as desired. D, lock nuts that can never get loose. E, ribbed brace. F, flexible hinge that makes the cap nearly self-cleaning.





Convenient size.

Anti-spark draft.

Smoke not sucked back into bellows.

Overlapping binding on bellows gives hand-hold all around.

Lock nuts.

Flexible hinge.

Smoker Manufacturers for 48 Years.

The A. I. Root Company

West Side Station *Medina, Ohio*

Package Bees

For Delivery after May 10

I have a bright strain of three-banded Italian bees and queens that are giving service wherever they go. Place your order with me and you will receive prompt service and entire satisfaction. Read what others say about them.

"Your queens are just wonderful. On a poor honey flow here this year my pound packages gave me an average of 150 lbs. of extracted honey each. I have never had pound packages do so well before, and I have had lots sent up from the South." Name on request.

Price List. I Pay Transportation Charges.

1-lb. package with untested queen..$3.00 each
2-lb. package with untested queen.. 5.00 each
3-lb. package with untested queen.. 6.00 each
25c less per package on shipments containing 20 or more packages.

Select untested queens, $1.00 each; 10 for $9.00; 100 for $85.00.

Select tested queens, $2.00 each; 10 for $17.50.

Safe arrival, prompt service, and entire satisfaction guaranteed.

Hayneville Apiary Co.
Hayneville, Ala.

Mayeux's Light 3-Banded Bees and Queens

FOR MAY AND JUNE DELIVERY

Last year we sold four thousand packages, the largest number ever known of a Louisiana beekeeper, with not more than a 2% loss. We are better equipped this year—have more bees to draw from. Each package contains a select untested queen with a comb of honey (natural feed) for transit. Each package goes out with a Government Health Certificate. 15 per cent down, balance at shipping time.

3-pound Packages

10	$ 45.00
25	108.75
50	212.50
100	4.00.00

4-pound Packages

10	$ 52.50
25	127.50
50	249.70
100	475.00

Remember, each package includes a select untested 3-banded queen.

We can also furnish combless packages at the same prices. A two-frame nucleus with a selected tested queen for breeding purposes, $6.00.

C. A. MAYEUX
HAMBURG, LOUISIANA.

ITALIAN QUEENS

For 1925 **OUR OLD RELIABLE THREE-BANDED ITALIANS** will be shipped from one of the largest and best equipped queen-rearing yards in the **SOUTH.** Since enlarging our queen-rearing yards we are prepared to put out double the amount of **HIGH GRADE** queens as heretofore and feel that we are in a better position than ever to fill all orders on time. We ship thousands of queens all over the U. S. and Canada every year. Our bees have a reputation as honey-gatherers. They have made a hit with northern beekeepers for their hardiness and ability to build up strong colonies in early spring. Orders booked for one-fourth cash, balance before delivery. Safe arrival guaranteed in the U. S. and Canada. No disease. Circular and price list free.

Prices for April, May and June: Untested, $1.25; 6, $6.50; 12, $12. Tested, $2.50; 6, $14.00; 12, $27. Select Untested, $1.50; 6, $8.00; 12, $15.00. Select Tested, $3.00 each.

JOHN G. MILLER
723 C St., Corpus Christi, Texas

CITRONELLE PACKAGE BEES AND QUEENS

Bright Italian bees and queens delivered promptly after April 10 over direct lines to the North. Prices are F. O. B. shipping point.

Untested queens furnished in packages. 2-lb. packages, $4.20 each; 10 to 25, $4.00 each; 25 to 100, $3.80 each. 3-lb. packages, $5.20 each; 10 to 25, $5.00 each; 25 to 100, $4.80 each.

QUEENS.

Untested, $1.00 each; 12 for $10.00, or 100 for $75.00. Select untested, $1.20 each; 12 for $11.00, or 100 for $85.00. Tested queens, $1.50 each; breeders, $5.00 to $25.00 each.

Health certificate with each shipment. Satisfaction and prompt service guaranteed.

Citronelle Apiaries
Citronelle, Ala.

Central Louisiana Apiaries

We do not believe in praising our own stock of light three-banded Bees and Queens, which we have worked up for the past 16 years, but we want you to be satisfied by sending in your order for some of this stock. We book to only 75 per cent of our capacity, which means promptness. If we are booked with orders we will very promptly send your money back. Understand that what we want is satisfied customers and more of them. On account of such a mild winter our bees are in excellent condition, so we will offer 3000 packages more than we expected. We are booked to May 15, so send in your order for delivery after May 15.

10	3-lb. with selected untested queens	$45.00
25	3-lb. with selected untested queens	108.75
50	3-lb. with selected untested queens	212.50
100	3-lb. with selected untested queens	400.00
10	4-lb. with selected untested queens	$52.50
25	4-lb. with selected untested queens	127.50
50	4-lb. with selected untested queens	250.00
100	4-lb. with selected untested queens	475.00

All of the above packages are shipped via express on a standard frame brood and honey, natural food for bees in transit. Our experience is that bees will arrive at destination in perfect condition on natural food.

5-lb. swarm with 2 frames, the best buy for the money and for honey go-getters, $6.50 each package with selected untested queen. The guarantee: We stand safe delivery, bees to be free from disease, all shipments go out with Government health certificate. Remember we ship on date promised.

Central Louisiana Apiaries

Oscar Mayeux, Prop. **Hamburg, Louisiana**

QUEENS

The ONLY reliable Shaw line-bred Italian queens on the market today. Carefully bred by experienced queen-breeders from the BEST of the old J. W. K. Shaw & Co.'s breeding stock. Bred under the same conditions and with the same care that made the Shaw line-bred queens famous. We are in the queen-rearing business to stay and give satisfaction. NOT TO EXPLOIT THE INDUSTRY. We give you the best queen it is possible to rear at an honest value. Compare our dollar-and-a-half queens with ten-dollar queens elsewhere. An honest comparison is all we ask—your decision must be startling. Our queens are bred from one line of choice breeders and our drones from another; combs are built on full frames foundation, and drone-traps run on all colonies.

Tested queens, $1.50.
Untested, $1.00.

Shaw & Ramsey

Loreauville, La.

Why Tolerate Those Non-Producers Again This Year?

Every spring you unpack a number of colonies too weak to build up for the honey flow. You nurse them through the season and hardly get them built up strong enough for winter quarters. Why not introduce a 2-lb. package of bees and a young high-grade Italian queen and make them above the average in production?

Prices on Package Bees as follows: 1-lb. pkg. with untested queen, $3.00; 10 or more, $2.65 each; 2-lb. pkg. with untested queen, $4.25; 10 or more, $3.95 each; 3-lb. pkg. with untested queen, $5.75; 10 or more, $5.35 each.

3-banded Italian queens: Untested, 1 to 11, $1.00; 12 to 24, 85c; 25 to 100, 75c; 100 or more, 70c. Select Untested, 1 to 11, $1.20; 12 to 24, 95c; 25 to 100, 85c; 100 or more, 80c. Tested, 1 to 11, $2.00; 12 to 24, $1.75. Select Tested, 1 to 11, $2.50; 12 to 24, $2.25.

Health certificate with each shipment, safe arrival and satisfaction guaranteed.

JOHN C. HOGG, RAMER, ALA.

If you wish package bees, nuclei or queens,

You Should Let Us Book Your Order Right Now

We give you choice of an **ITALIAN, GOLDEN** or **CARNIOLAN "QUALITY QUEEN," with each package or nucleus. Full weights,** good quality and prompt service. If you have not received our price list, write for it.

AULT BEE COMPANY

513 HOUSTON BUILDING. **SAN ANTONIO, TEXAS.**

(Continued from page 280.)

trading limited, market dull. Extracted: Sales to bottlers and confectioners, Wisconsin, Illinois, and Iowa alfalfa and white clover, white, 11-11½c; dark to light amber, 9-10c; Wisconsin, white clover and basswood, 12-12½c; Intermountain region, white sweet clover and alfalfa, 11-11½c; Iowa and Illinois, white sweet clover, 11-11½c. Comb: Sales to retailers, 24-section cases: Intermountain region, white sweet clover and alfalfa, $4.75-5.00; midwestern alfalfa and white clover, white No. 1, $4.50-4.75; No. 2 and light amber, $3.00-4.50; off-color and broken combs, $2.00-2.50. Beeswax: Trading moderate, market steady. Sales to retailers and manufacturers of electrical and dental supplies, light, 40-42c; dark, 34-38c per lb.

MINNEAPOLIS-ST. PAUL—No large arrivals since last report. Supplies moderate. Demand very slow, market weak. Comb: Sales to retailers, 24-section cases: Minnesota, Wisconsin, and Iowa white clover No. 1, $4.50-5.00; Idaho white sweet clover and alfalfa No. 1, $4.75-5.00. Extracted: Sales to retailers, confectioners and bakers in 5-gal. lots or more, per lb., Minnesota, Wisconsin, and North Dakota white clover, 11-12c; few as low as 10½c.

KANSAS CITY—No carlot arrivals since last report. Supplies light. Demand good, market firm. Sales to jobbers, extracted: Colorado white alfalfa, 12½c per lb. Comb: Colorado, 24-section cases white alfalfa fancy, $5.50; No. 1, $5.25; No. 2, $5.00.

NEW YORK—Extracted: Since last report 12 cases, 44 bbls. Porto Rico, 2 drums San Domingo imported. Receipts moderate. Demand limited, market dull. Sales to wholesalers, jobbers, confectioners, bottlers, and bakers, 60-lb. cans New York white clover, mostly 10-11c, few 12c; buckwheat, 9-10c; California light amber sage, 11½-12c; Intermountain white sweet clover, 10-12c. Barrels: Florida tupelo, 12-13c; light amber, 8-9c; Georgia light amber, 9c; Porto Rican supplies light, barrels, $1.00-1.10 per gal. Comb: Supplies moderate. Practically no demand, market weaker. New York and western white clover, fancy, $5.00-5.50; No. 1, $4.50-5.00; No. 2, $4.00-4.50. Beeswax: Since last report 126 pkgs. Holland, 69 bags Germany, 35 bags Spain, 94 bags Belgium, 68 cases India, 135 bags Brazil, 72 bags Chile, 95 bags Cuba, 24 bags San Domingo imported. Supplies light. Demand good for light-colored stock but very little available; only limited demand for dark wax; market firm. Per lb., Brazil and Chile, principally Brazil, light, 40-43c; Africa, medium, 38-40c; West Indies, dark, 38-39c; Spain, medium, 39½c; California, yellow, 42c; medium, 40c; dark, 38-39c.

H. C. TAYLOR, Chief of Bureau.

Special Foreign Quotation.

LIVERPOOL—Since our last report there has been very little business transacted. We hear of sales reported from Chili to the continent at 53/ per cwt. c. i. f. at which price the honey from that country could not compete on this market with Jamaican and Cuban. We quote probable values in American currency at about 12¾c per lb. We are pleased to be able to report a little progress in beeswax. There has been a firm demand and supplies are readily disposed of. We estimate the value in American currency to be about 41c per lb.

Liverpool, Eng., April 3. Taylor & Co.

From Producers' Associations.

TORONTO—Our 1924 crop is gradually getting cleaned up. We are already sold out of clover 5's and other different-sized containers. All grades are moving very satisfactorily. Our prices remain firm at following prices: Clover honey, 2½-lb. tins, 14c per lb.; 10-lb., 13c per lb.; 60-lb., 12½c per lb. Light amber, 1c less. We are practically sold out of buckwheat honey.

The Ontario Honey Producers Co-operative,
Toronto, Ont. A. G. Halstead, Gen. Mgr.

The A. I. Root Company's Report.

Since our last report, we have purchased 4440 lbs. extracted white clover honey at 9c per pound; 9262 lbs. of extracted buckwheat at 8c per pound and one carload of extracted alfalfa grading from white to water-white at 8¾c per pound. All prices f. o. b. shipping point. We have purchased no comb honey during the last thirty days.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, FOR APRIL 1, 1925.

State of Ohio, County of Medina, ss.:

Before me, a Notary Public, in and for the state and county aforesaid, personally appeared H. G. Rowe, who, having been duly sworn according to law, deposes and says that he is the Business Manager of Gleanings in Bee Culture, and the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Name of— Post office address—

Publisher, The A. I. Root Company, Medina,
Editors, E. R. Root and Geo. S. Demuth, Medina, Ohio.
Managing Editor, H. G. Rowe, Medina, Ohio.
Business Manager, H. G. Rowe, Medina, Ohio.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

J. T. Calvert, Medina, Ohio; Maude R. Calvert, Medina, Ohio; H. H. Root, Trustee of A. I. Root Estate; E. R. Root, Medina, Ohio; H. H. Root, Medina, Ohio; Mabel K. Root, Medina, Ohio; Trustees of Employees' Profit Sharing Fund.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities, are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is. (This information is required from daily publications only.)

H. G. ROWE, Managing Editor.

Sworn to and subscribed before me, this 10th day of March, 1925.

H. C. WEST, Notary Public.
(My commission expires March 27, 1925.)

MAY QUEENS

Gentle, well-marked bees that pay a profit.

1 Untested	$1.00 each
25 Untested	.95 each
50 Untested	.90 each
100 Untested	.85 each
Tested	$1.50 each
Ex. Sel. Tested	3.00 each

Get my prices on large lots for summer delivery.

D. W. HOWELL
SHELLMAN, GA.

Bees and Queens

Very best strain of Italians for May and June deliveries, at the following bargain prices:

1	2-lb. pkg with Italian queen	$3.75
10	2-lb. pkgs. with Italian queen	32.50
25	2-lb. pkgs. with Italian queen	75.00
50	2-lb. pkgs. with Italian queen	142.00
100	2-lb. pkgs. with Italian queen	275.00
1	3-lb. pkg. with Italian queen	4.25
10	3-lb. pkgs. with Italian queen	40.00
25	3-lb. pkgs. with Italian queen	92.75
50	3-lb. pkgs. with Italian queen	182.50
100	3-lb. pkgs. with Italian queen	355.00

Remember, an untested Italian queen of either the three-band or leather-colored strain with each package without extra cost. I am a shipper of many years' experience. I guarantee safe delivery in the U. S. and Canada. No disease. Very best strain of Italians that money can buy and that I can produce. All orders filled promptly on day wanted or your money back on first mail. 10 per cent books order. I especially appreciate orders from my old customers, and will always give you the same prompt, honest service.

References: Citizens National Bank of this place or the Guarantee State Bank, of Gause, Texas, where I lived for over 15 years before coming here.

H. E. Graham, Cameron, Tex.
P. O. Box 666

GOLDEN ITALIAN QUEENS BRED FOR BUSINESS

Only one grade select. Safe arrival and satisfaction guaranteed.

Untested, 1, $1.00; 12, $10.00. Tested, $2.50 each.
1-lb. pkg. of bees and untested queen, $3.00; 2 lbs., $5.00. All mail charges paid.

E. A. SIMMONS - - GREENVILLE, ALABAMA.

Townsend's Bulletin No. 21

This is April 11th. Our State Inspector of apiaries left here yesterday after inspecting nearly every colony of my two yards of SHAW "line-bred" three-banded Italian bees. He says there are no known diseases among bees within one hundred miles of Loreauville. I have mentioned this fact in a previous Bulletin, so there is not a particle of danger in ordering nuclei from this location for fear of disease. The best thing he DID say was, that he **never saw a single dead larva in any of my colonies.** Isn't this wonderful! In the neighborhood of three hundred swarms and nuclei, every cell of brood alive! I do believe, if the SHAW bees had any disease excepting American foul brood, they would clean up and no one would ever know that they had disease. Do you have mongrels that tolerate dead brood in the hive? I offer you the remedy.

I quote SHAW "line-bred" leather-colored three-banded Italian breeding queens as follows:

XXX Breeding queen	$10.00 each
XX Breeding queen	8.00 each
X Breeding queen	6.00 each

If you buy a XXX breeding queen, you can have a choice of the yard. They are same as I breed from, and the best money can buy. If you buy a XX queen you will get about as good a queen as the XXX, only her drones may not quite all have three bands. The X queen will be a breeder for one who is not so exacting, but will be well worth the money.

Besides breeding queens, I will offer two hundred 2-frame nuclei of genuine SHAW bees, to be headed with a genuine SHAW tested queen, for spring delivery. To those who would like to introduce some "better bees" into their yards, I offer these as the best that money can buy. I offer them as long as they last, at only $5.00 each, to go by express, purchaser paying transportation charges. Safe arrival guaranteed.

I quote genuine Untested SHAW queens for June delivery as follows:

One untested queen for	$1.25
Twelve untested queens for	12.00

Return dead queens for replacement.

The only place you can buy GENUINE SHAW bees and queens, bred in line for more than forty years, is to buy of E. D. Townsend, Loreauville, La., successor to J. W. K. Shaw & Co. After May 18th, write me at Northstar, Michigan.

The Best Place to Buy Package Bees

IS WHERE RELIABILITY, BEST QUALITY, PROMPT SERVICE AND SQUARE DEALING ARE THE ESSENTIAL PRINCIPLES, AND WHERE GUARANTEES ARE WORTH SOMETHING.

The above is the foundation of my business and shall be maintained. From those who have not heretofore been satisfied with their purchases of package bees, I invite the most rigid investigation of my business and business methods. I guarantee to satisfy you, else will promptly refund your money. Frequently letters are received like this: "Your price is a little higher, but am sending you the order as am assured of receiving my bees on time."

DELIVERED PRICES TO JUNE 1st, EITHER BY PARCEL POST, POST-PAID OR PREPAID EXPRESS.

1-pound package, including select untested queen.....$3.50
2-pound package, including select untested queen..... 5.25
3-pound package, including select untested queen..... 6.25
10 or more packages, either size.....25c per package less.

If queenless packages are desired for strengthening weak colonies, deduct $1.25 per pkg.

THREE-BANDED LEATHER-COLORED ITALIAN QUEENS.

1 select (one grade) untested queen.....$1.25
5 select (one grade) untested queens 5.50
10 select (one grade) untested queens 10.00
Select tested queens each..... 2.00

Safe arrival of bees and queens, pure mating and perfect satisfaction guaranteed. Furthermore, I make good my guarantee. 10 per cent cash to book an order, balance just before shipping. Will ship on the day you name, having the bees, men and equipment to handle orders promptly. Should you find a queenless colony this spring, send to me for a young queen to save them. I will not disappoint you. Health certificate will accompany each shipment. A trial order will convince you I have the highest quality of bees and queens. **Shipping begins April 1.**

JASPER KNIGHT, HAYNEVILLE, ALABAMA

The New England Apiaries

Our queens are the very best 3-banded Italians and guaranteed to please you, or your money refunded.

June 1st Untested.		Package Bees and Nuclei with Queens.	
1	$ 1.00	2 lbs.	$4.50 each, 10 or more, $4.00 each
12	10.00	3 lbs.,	5.50 each, 10 or more, 5.00 each
50	40.00	2-fr. nuclei,	5.00, 10 or more, 4.50 each
100	75.00	3-fr. nuclei,	6.50, 10 or more, 5.00 each

We believe we send out the finest package bees and nuclei in the country. Generous overweight packages and fine combs of sealed brood. Our bees are gentle.

New Britain, Connecticut

Tons of Package Bees

Shipment starts April 10. 20 per cent books your order, balance a few days before shipment. No bees or queens sent C. O. D., parcel post or on credit. Will not book more orders that I can fill. Shipment made as near date set for shipment as weather will permit.

1 to 10 2-pound packages of bees, $3.00 each; 3-pound packages of bees, $4.00 each.
10 to 25 2-pound packages of bees, 2.75 each; 3-pound packages of bees, 3.75 each.
25 and up 2-pound packages of bees, 2.50 each; 3-pound packages of bees, 3.50 each.

To above add price of queen wanted in each package. Untested, 1, $1.00; 6, $6.00; 12, $12.00; 50, $45.00; 100, $80.00. Select Untested, 1, $1.25; 6, $7.00; 12, $13.50; 50, $50.00; 100, $90.00. Tested queens, $2.00 each. Select tested, $3.00 each.

W. O. Victor, Uvalde, Texas

Prompt Shipment

on Package Bees and Queens for May Delivery

The big increase in the output of **THRIFTY** bees and queens has enabled us to make prompt shipment on all April orders

May is the heaviest month of the season, but we are in position to give you prompt shipments.

May 1st we will be operating at full capacity. Send us your rush orders for bees and queens and let the **THRIFTY** bees help you increase profits.

Safe delivery and satisfaction guaranteed.

Untested Queens—1 to 11, $1.00 each; 12 to 25, 85c each; 25 to 99, 80c each; 100 up, 70c each. Select Untested Queens—1 to 11, $1.25 each; 12 to 25, $1.00 each; 25 to 99, 90c each.

PACKAGE BEES—One-pound packages: 1, $2.10; 25, $1.90 each; 100 up, $1.50 each. Two-pound packages: 1, $3.50; 25, $3.30 each; 100 up, $3.00 each. Three-pound packages: 1, $5.00; 25, $4.75 each; 100 up, $4.50 each. Add the price of queen wanted. Prices F. O. B. our station. Ask for folder giving full details.

W. J. Forehand & Sons, Fort Deposit, Ala.

Attention Beekeepers!

On April 8th I received the following wire from customer in Hamilton, Ontario: "Bees arrived in perfect condition, except one package which was totally empty. Express agent signed for same. Ship balance Saturday."

This message referred to a shipment of 50 packages made on April 4th, the remaining 50 having been shipped on the 11th. Can still take care of a good many orders for May delivery at the following prices:

1 2-lb. pkg. with untested queen..$ 4.25	1 3-lb. pkg. with untested queen.$ 5.25
10 2-lb. pkgs. with untest. queen.. 37.50	10 3-lb. pkgs. with untest. queen.. 45.00
25 2-lb. pkgs. with untest. queen.. 90.00	25 3-lb. pkgs. with untest. queen..108.75
50 2-lb. pkgs. with untest. queen..172.50	50 3-lb. pkgs. with untest. queen..212.50
100 2-lb. pkgs. with untest. queen..320.00	100 3-lb. pkgs. with untest. queen..400.00

2 and 3 frame nuclei at same prices as packages. Tested queens, 50c extra.

I have been in the bee business for over 15 years and have the best stock of three-banded bees I have been able to purchase or breed. There has never been any disease in this section of the state, and the State Inspector advises me that Georgia is now free from disease. Certificate of State Inspector with each shipment. I guarantee safe delivery and will replace or refund on receipt of bad-order report from the express agent at point of delivery. I do not recommend shipment by parcel post, as I have no redress against the government in case of damage or loss in transit. Have over 700 colonies from which to make shipments.

Will quote low prices on queens for delivery after June 15th.

I have been local representative for R. G. Dun & Co. for nearly 20 years and refer to any bank or banker in this section of the State.

N. L. Stapleton, Colquitt, Georgia.

What Root Quality Queens Did

EVERY COLONY OF GEO. JACOBSON'S APIARY AT KANKANNA, WIS., HEADED WITH A ROOT QUALITY QUEEN.

QUEEN PRICES APRIL 15 TO OCTOBER 15.

Quantity:	1 to 9.	10 to 24.	25 to 49.	50 to 99.	100 or over.
Untested	$1.50 ea.	$1.35 ea.	$1.25 ea.	$1.10 ea.	$1.00 ea.
Select Untested	2.00 ea.	1.80 ea.	1.70 ea.	1.55 ea.	1.45 ea.
Tested	2.50 ea.	2.25 ea.	2.10 ea.	2.00 ea.	1.85 ea.
Select Tested	3.00 ea.	2.70 ea.	2.55 ea.	2.40 ea.	2.25 ea.
		1 to 9 pkgs.	10 to 24 pkgs.		25 or more.
2-pound package of bees		$5.00 ea.	$4.50 ea.		$4.00 ea.

WE ARE BOOKING ORDERS NOW

The A. I. Root Company, Medina, Ohio

Superior Italian Bees & Queens

Reasons worth your consideration why we can handle your order:

WE ARE RESPONSIBLE
WE HAVE THE EQUIPMENT (2700 colonies Italian bees.)
WE HAVE THE EXPERIENCE (We ship thousands of pkgs. and queens

Write us what your requirements are and let us advise you exactly what we can do

—— PRICES ——	One.	Ten.
Two-pound packages, with queens	$4.50	$4.00
Three-pound packages, with queens	5.50	5.00

Durable Cypress Supplies

100 cypress hive bodies, with frames, dovetailed	$110.00
100 shallow extracting supers, with frames	70.00
1,000 white pine Hoffman frames	45.00
1,000 shallow extracting frames	32.00

The Stover Apiaries, Mayhew, Miss.

Thagard's Imported Three-bands Make Good with Mr. Stallings

"I average over 400 lbs. from the colonies headed with your imported stock."—Willie Stallings, Honoraville, Ala.

Our queens are bred from breeders direct from Italy, and mated to imported drones. They have not only made good with Mr. Stallings but with thousands of the best beekeepers in the country.

Untested queens: 1, $1.00; 12 up, 85c each; 100 up, 75c each.

One-pound package with queen, $2.60. 12 up, $2.40 each. Two-pound package with queen, $3.80; 12 up, $3.60 each.

The V. R. Thagard Co.
GREENVILLE, ALA.

NEW ENGLAND BEEKEEPERS

Freight paid to Brattleboro, Vt., on

Root Quality Bee Supplies

SEND YOUR ORDER NOW.

F. H. Coombs & Sons
BRATTLEBORO, VT.

Big, Bright Northern-bred Italian Queens

Bred for beauty, gentleness, and honey-gathering qualities. Delivery begins June 1. Untested, $1.00 each.

M. P. LeMUNYON, R. D. 3, Cassopolis, Mich.

(Continued from page 320.)

as they missed the queen tney returned to that empty hive.

I suppose this machine would have worked, and yet even if it did it would not have paid to use it. It would not be practical to make a machine for every colony, for they would cost several dollars each, and the inconvenience of having hives all encumbered in this way would be out of the question. Why will beekeepers waste their money in patenting things so impractical?

Achord Bees and Queens for Immediate Delivery

2-lb. pkg. with select young laying queen	$4.75
Five 2-lb. packages	22.50
Twenty-five 2-lb. packages	112.50
3-lb. pkg. with select young laying queen	5.75
Five 3-lb. packages	27.50
Twenty-five 3-lb. packages	137.50

Express charges collect at destination. Safe arrival guaranteed. Inspection certificate and all necessary papers to carry packages through without delay. If packages are wanted by parcel post, add 15c and postage to the price of each. We will advise you cost of package to your postoffice. If wanted without the queens, deduct $1.00 from the price of each package.

Queens

Select young laying queens, $1.00 each, any number. Tested queens, $1.75, each, any number.

Terms 20 per cent with order, balance a few days before shipment. No bees sent C. O. D. Producing and shipping package bees and queens has been our sole business for many years. We have passed the costly and dangerous experimental stage. Your order placed here brings highest value for the money invested. For complete information send for latest price list.

W. D. ACHORD, Fitzpatrick, Ala.

LOCKHART'S SILVER-GRAY CARNIOLANS.

42 years of experience breeding this wonderful race of bees; 38 years a breeder and importer of queens. They are very hardy, gentle, prolific, great honey-gatherers, and builders of very white combs. Use mostly wax in place of propolis. Not inclined to rob like Italians. Winter extra well and build up quickly in spring. Prices of queens for May and June: Untested queens, $1.50 each; 6, $1.45 each; 12, $1.40 each; 25, $1.25 each; 50 or more, $1.00 each. Select untested queens, $2.00 each; 6, $1.80 each; 12, $1.75 each; 25, $1.60 each; 50 or more, $1.50 each. Tested queens, $3.00 each; select tested, $5.00 each; breeding queens, $10.00 to $25.00 each. Prices of queens from July to November: Untested queens, $1.00 each; 6, 95c each; 12, 90c each; 25, 80c each; 50 or more, 75c each. Select untested queens, $1.50 each; 6, $1.45 each; 12, $1.40 each; 25, $1.25 each; 50 or more, $1.00 each. Safe arrival and satisfaction guaranteed in U. S. and Canada. No foul brood here. **F. A. Lockhart & Co., R. F. D. 1, Lake George, N. Y.**

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2½-pound Cans, in crates of 100	$4.00 a crate
5-pound Pails, in crates of 100	7.00 a crate
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60-pound Tins, new, 2 tins per case	1.00 each
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16-ounce honey capacity, 2 dozen per carton	$1.20 per carton
3-pound or quart capacity, 1 dozen per carton	.90 per carton

SPECIAL HAZEL-ATLAS TALL JARS

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16-ounce honey capacity, 2 dozen per carton	1.35 per carton
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HONEY FOR ROAD STANDS

White Clover, 60-pound tins, crystallized	13c per lb.
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That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Untested queens, $1.00; 6, $5.00; 12, $9.00. Select Untested, $1.25; 6, $6.00; 12, $11.00. Safe arrival and satisfaction guaranteed. Circular free.

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They are gentle and hardy. Reared from the best mothers obtainable. I will have 1000 mating nuclei in operation by May 1. Safe arrival and satisfaction guaranteed. Queens, Untested, $1.00 each; 12 for $10.00; 25 or more, 80c each. Queen, Tested, $1.50 each; 12 for $16.00. Breeders, $5.00.

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YOU BUY *BEES AND QUEENS* IN ONE OF TWO WAYS

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You either know you are going to get good queens and bees or you hope you are.

Hope may result in poor stock, delay, loss of colony and no honey. Knowledge means first-class stock, prompt delivery, courteous treatment, satisfaction and profit.

When you mail your order to FOREHAND you know you are buying QUEENS AND BEES on certainty. How about your next order?

Untested queens, 1 to 12, $1.00 each; 12 to 25, 85c each. One lb. bees with queen, $3.25; two lbs. bees with queen, $5.25; three lbs. bees with queen, $6.25; 10 or more packages of either, 25c less per package. POSTAGE PAID ON BEES AND QUEENS. Satisfaction and safe delivery guaranteed. REMEMBER THE PRICE IS PREPAID ON PACKAGE BEES. Write for prices on large lots.

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Last August we received from you 100 lithographed honey pails, in three sizes which we used in our display of honey at the last Ohio state fair, to very good advantage, and I hardly feel it fair not to tell you of our success, in as much as these beautiful pails had so much to do with our winning.

I won second prize in individual display of bees and bee products. ($30.00) And Franklin county Association won first prize ($125.00) in competition with five other County or District Bee-keepers Association displays, which was won very largely we were told through our efforts and with these beautiful lithographed pails.

THESE two paragraphs, taken from a letter written by R. D. Hiatt, Deputy State Apiarist, Department of Agriculture of the State of Ohio, prove the value of Canco decorated cans to honey packers.

If Canco cans do this for one man, don't you think they will help sell your honey as easily?

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